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Weathering relationships:

the intra-action of people with climate

in Himalayan India

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Declaration

I declare that, except where otherwise indicated, this thesis is entirely my own work, and that no part of it has been submitted for any other degree or professional qualification.

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Abstract

Weather – cold, wet, hot and windy – pervades life, material and social. So present and obvious as to provide a challenge for research, material though ephemeral too, weather breaks boundaries and refuses categorisation. While night becomes day, the cold season warms up over weeks and annual patterns are changing on a scale of years, practices in the face of weather transitions are themselves shifting. Based on ten months of fieldwork in the small village of Gau in the Pahari Indian Himalayas this thesis interrogates the saliencies and permeations of weather in people's lives. It investigates how people *intra-act* (Barad 2007) with the weather, though practices, infrastructures and relationships with others. My approach argues for the validity of weather as a means by which to learn about socio-material lives. Pahari villagers live and act within the weather that moves around them. They are subject to, but also modify, their thermal environment. Through housing, clothing and tools such as the fire and the fan they affect the impact of the weather as it meets their bodies, but also daily patterns of movement are coloured by weather considerations. This work views weather in relation to health practices (such as refraining from working during the rain so as not to fall ill), for care of others (such as domestic bovines), for house-building and hospitable relationship-building among neighbours, for negotiation of landslide-fraught access roads to elsewhere and for understandings of pollution in the air. This focus on weather is intended to connect dots for people working on climate change, both within and beyond anthropology, and to contribute to discussions in areas including human-animal relations, health and illness and housing.

Lay summary

Climate change is a problem. It is a problem for people because climate is long-term weather and the weather matters to people. This thesis looks at some of the different areas in which weather matters for people's lives, using what I learnt in a small village (Gau) in the Indian Himalayas. Cold winter rain mattered for the people in Gau because the risk of falling ill meant they might not be able to work. So this was about how they managed their households as a group of people working together and also looking after each other. But they didn't just look after each other, they also looked after their buffalo, who they kept for milk and manure and also cared for by cooling down in the heat of the hot season. Housing was important for how people in Gau managed the heat, and also their relationships with their neighbours. Some people were building new cement houses, and these were considered less comfortable in the cold and the heat, in contrast to the older wooden houses. During the monsoon season rain would often cause landslides, blocking movement between the village and other places and affecting men's travel for work and women's travel to their natal villages. Pollution is a term that may be used locally or globally or even with regards to caste relationships in India, and was useful in connecting these topics back to the global question of climate change.

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Contents

Glossary

Pahari:

baag	leopard
baas	animal house
baloo	bear
bhos	straw for the animals to eat
biul, gorial, karaik	trees
chammasa	monsoon/ literally 'char mausam' – 'four weathers': hot, cold, wet and dry.
drinti	the daughters of the village, whether unmarried or married elsewhere and visiting
gagti	white root vegetable
kinnaul	doughnut-shaped buffer for carrying loads on the head
kwerd	fog, mist
lomri	fox
rassi	dance
roynti	in-married women in the village
thol	work

Hindi:

angan	courtyard
baag-ki-shaadi	literally running-away-marriage, i.e. elopement
barish	rain
barsaat	the monsoon
bhabhi	sister-in-law
bhaghvan	god, does not necessarily imply monotheism
bhaji	fried battered vegetable

bhangra	Punjabi dance
chand	silver
chappals	flip-flops
chulha	cooking hearth
daan	ritual gift
dekhna	to watch
dekh-rekh	watch, look after
devi	goddess
dhaba	small roadside tea stall
diwali	festival of lights in mid-December in the hills
dupatta	scarf worn with *salwar kemeez*
gali	insult
garmi	warm, hot season
ghar	house/household
ghas	grass, green matter, fodder
ghi	clarified butter
jajmani	caste division of labour
jangel	forest, wild place (source of English word jungle)
kam	work
khushbu	nice smell
kohra	mist
laddoo	round orange sweet
lassi	soured buttermilk
mante	obey, respect, accept (in the present tense plural)
marna	to kick, to bite (also means to kill)
mausam	weather
mela	festival, fair
naukri	waged labour, a job

navratri	festival of nine days' fasting, in spring and autumn
pahar	mountains
pahar girte	landslide
pakka	solid, proper, cement
panchayat	village council
rajput	high caste landowners. Traditionally rulers and warriors
rakhi	ritual bracelet given by sisters to their brothers at *raksha bandhan*
raksha bandhan	Hindu sister-brother festival
roti	flat bread
saf	clean/clear
sardi	the cold season
salwar kemeez	loose trousers and top typical in north India, traditionally associated with Muslims but now worn by most young women, and in Gau by all ages
senkne	to soak
sheher ki hawa	wind of the city
thand	cold, cold season

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Introduction

> [T]he weather conditions our interactions with people and things (Ingold 2010:133).

Lives in Pahari villages in India, much like the rest of the world, are lived in the weather and bound up in a web of material conditions and social relationships. Using weather as a guiding light through this web, in this thesis I will describe weathered lives by moving through the seasons to interrogate various areas of life. It is only through understanding what weather means in people's intra-actions, that is to say their interactions within and with (Barad 2007) weather, that we can approach the climate change problem. I hope, with a firmly ethnographically founded approach, to contribute to the emerging understanding of what climate change means for human lives.

The climate is changing (IPCC 2013). Although this change is well mapped-out, the implications for people's lives are only partially clear. Climate change is about the climatic system shifting to new patterns and also becoming increasingly erratic. These changes are being experienced by people as changing weather and even changing seasonal systems, and there is therefore a role for 'serious ethnographies on climate change' (Lindisfarne 2010:2). I will approach climate change in this thesis through an ethnographic study of an agro-pastoral village I am calling Gau in the ecologically sensitive Indian Himalayas, source of water for many people in India and China (Chettri et al. 2012). This is a contribution to knowledge built around the potential ramifications of climate change and grounded in the daily concerns of people who, with their mobile phones and hand sickles, their subsistence and cash crops and their electric ring and open fire, straddle, like so many Indians rural and urban, the relationship with the land and the connections of goods, energy and communications with the world around them. This is an ethnography specific to the people of Gau. But it is also a starting point for investigating wider climatic concerns.

The weather is changing. What does this mean? My position is that to understand what it means that the weather is changing, one has to comprehend what it meant in the first

place. This ethnometeorological project, looking at 'the place of weather in the life ... of a society' (Simpson 1997:21), seeks to describe the existing dynamics through which people live in and modify the weather around them. Relating illness, work, human-animal relations, housing, movement and pollution to weather, my goal is to illustrate the many implications climate change will have for rural, agricultural life and beyond. Part of place but ephemeral, local but global, life-giving and uncontrollable, the weather is nonetheless socially imagined and managed.

Although throughout the thesis I will be using the term 'weather' as an equivalent of the Hindi *mausam* and referring to specific weathers such as cold winter rain or the heat of the sun, in this introduction I deal with 'climate' because that is the term used in the discourse on climate change. 'Climate' refers to weather over period of more than 30 years, while 'weather' is any weather, happening over a short or long duration. Spatially the scalar distinction is a little more complicated, with 'climate' used colloquially to refer to the longterm weather of a local place such as a town or mountain, as well as of entire countries and the planet as a whole. I follow the use of 'climate' in referring to the longterm weather of a place in the section below on weather and place, while references to global climate remain in the context of climate change. Weather is specific in this account, it is moving but tangible because sensed and described.

Weather, that is heat, rain and wind, are ever-renewing forces that flow towards people and the landscapes around them in a process of ontogenesis, 'in which form is ever emergent rather than given in advance' (Ingold 2012:433). It is these flows that people and animals feel and are exposed to. In this thesis I will indicate some of the ways in which these mutually transformative collisions occur. The interface of thermal sensation, perception and action is key to understanding the relationship between people and weather. In my understanding of weather, then, as well as forming the backdrop, it makes up the context for life, life which is *submerged* in weather. This weather is powerful, but it is productive of life as well as threatening. In teasing out some of the specifics I hope to portray the weather as complex, but productive for understanding social and material lives.

In this introduction I will frame my project, establishing some conceptual scaffolding and laying out the framework for the rest of the thesis. Starting with climate change will lead into the question of the relationship between the global and the local, crucial to a village ethnography that contributes to climate change scholarship. The entangled nature of weather and place follows this, deepening the 'local' as it applies to weather. Then there is a section on climatic determinism and how to write about society and weather while avoiding some of the larger potholes. This is followed by a discussion of weather as material, which is paired with a section on the moral and political dimensions of weather research. Finally, I will discuss the seasonal and scalar ways that the chapters will be structured, how seasons are inherent to weather in the crossing point between weather and place and time, and provide an overview of the rest of the thesis.

Establishing Climate Change

> [T]he discourse of climate change, with its scientific, economic, political, and moral dimensions ... is changing the way local events are framed and understood. For anthropologists to neglect it would be unthinkable (Milton 2008:57-58).

What is climate change and why is it important? Climate change is affecting societies across the world, as exhaustively described by the 5th Intergovernmental Panel on Climate Change assessment report (IPCC 2013). This report is one of a series of peer-collated summaries of the work of large numbers of scholars on climate change. According to the IPCC, climate scientists have established that the release of carbon and other materials through human, mainly industrial, activity in gas form into the atmosphere have affected planetary weather systems and the way that heat is able to leave the atmosphere. As the IPCC report has established, this warming is causing effects such as rising sea levels, melting permafrost, and glacier loss, which are in some cases already affecting human populations. A noteworthy feature of the predictions is the increased likelihood of climatic variability, the increased likelihood

of extreme weather events and the upset of established weather patterns caused by the change in overall weather systems.

Humans as we know ourselves, *Homo sapiens sapiens*, became behaviourally modern around a hundred thousand years ago (McBrearty and Brooks 2000:530), but agriculture originated only around ten thousand years ago, when the climate stabilised into the epoch we know as the Holocene. The current climatic era, or transition (Gilbert et al. 2012), which some are naming the Anthropocene, may thus be one in which the fluctuating climate will no longer allow for the practice of agriculture. That is the same agriculture on which most human nutrition is currently based. This is part of why climate change is such an important issue – because it involves the risk of entering a climatic world in which agriculture may no longer be possible.

Climate as a field of knowledge (climatology, meteorology) has become cut off from human experience. Around the turn of the 20th century the Norwegian physicist Bjerknes, working on circulation theory, set out to 'redefine meteorology ... as a branch of physics' (Friedman 1989:58). The climate and weather have, since Bjerknes, 'belonged' to scientists: climatologists and meteorologists, as part of the larger picture of the division of the world into disciplinary areas (Latour 1993:14). Knowing the weather, then, was reserved for certain disciplinary approaches. In recent decades, following on from Barnes and Bloor's work in the 1970s that led to Science and Technology Studies, several kinds of approaches have chipped away at this divide. Simonetti studied the climate scientists themselves (2015), while Lahsen looked at climate policy and public perceptions of climate science in the US (2005:160). As Knox observed (writing about the UK), ways of tackling climate change are entangled within society and this would unsettle policymakers (2015:102).

The recent AAA statement on climate change refuted the division Bjerknes set up, establishing that: '[c]limate change is rooted in social institutions and cultural habits. … Climate change is not a natural problem, it is a human problem' (AAA 2015) and thus a matter for anthropologists. There has been some interest in climate change in anthropology since 'The Atmosphere: Endangered and Endangering' conference in

1975 (Kellogg and Mead 1976). Anthropologists been urging in recent decades for stronger anthropological contributions (Rayner 1989, Batterbury 2008, Crate 2008, Hornborg 2008, Lindisfarne 2010, Townsend 2004).

Responses to these calls include some excellent edited volumes. Strauss and Orlove's (2003) looked at weather along with climate, bringing some very thoughtful ethnography to the climate-culture relationship. Paolisso's chapter, for instance, on the fishermen of Chesapeake Bay, examined their understanding that God's way of regulating the crab population was by sending storms, making it periodically impossible to fish, which was quite different from how the scientists working in the area understood regulation of the crab population (2003). Crate and Nuttall's (2009) edited volume on anthropology and climate change took a policy oriented approach, while Crate (2011) and Baer and Singer (2014) contributed a history of the work in anthropology on climate change.

Climate change is a highly diverse phenomenon which requires a wide range of responses, in areas such as domestic energy use (Shove 2003), anthropology of the environment (Milton 1996) and global inequality (Chakrabarty 2012), which may productively feed in to our understanding of what climate change means for people, and what may be done about it. The risk in this field is work which bends over backwards trying to be collaborative and interdisciplinary, thus losing much of its analytical and empirical value, as outlined by Hall and Sanders (2015). However, there is plenty of interesting work that maintains disciplinary standards while providing insight into the human dimensions of climate change. The growth of this field in the UK has thus far culminated in the Royal Anthropological Institute conference in May 2016 with fifty panels on 'Anthropology, weather and climate change'.

This thesis, then, is situated within a growing field which is still in the process of defining itself. While naming sub-fields such as 'the anthropology of weather', 'the anthropology of climate change' or 'anthropocene anthropology' might not be productive in itself, these flags serve to gather those working on similar areas to have

conversations to help delineate goals and purposes of the research (see also Jerstad 2015).

The global and the local

Having thus established anthropological approaches to the global issue of climate change, I turn to trace a few connections between 'climate as a new geo-social leviathan' (Knox 2015:92), and the ethnographic analysis presented in this thesis. Chakrabarty wrote about the gaps that become apparent in writing on climate change, that is to say gaps between the global problem and local implications, because thinking on climate always has to shift between these different scales (2014:3). This is a challenge faced by climate researchers and ethnographers alike (Krauss 2009:149).

This thesis links the global and the local in three ways that I will cover before going into a further exploration of the local-global relationship of weather and climate change. The first global-local connection follows on from the idea outlined above that the world might be headed for pre-Holocene type conditions of climatic uncertainty. In a global situation where for the overwhelming majority of people agriculture is the source of their food, I have chosen to work with a rural, agricultural village that grew food both for themselves and to export to cities. My second global-local connection builds on the remit of the discipline of anthropology in working somewhere specific to build understandings that might relate to humans studied in very different places. This project looks at weather experiences and strategies in Gau in order to understand something about how people across the globe might relate to weather. And at the same time it builds on existing scholarship in anthropology of weather from hugely disparate places. The third global-local connection is based on the continuity of the weather itself, from Edinburgh to Gau, which is not obstructed by the national borders along the way. This builds up under Tsing's argument that the global itself is problematic (in Haraway et al. 2015), and will be investigated in greater depth in chapter six. The third connection also implies that the weather is both local and global, and indivisibly so, without discarding the usefulness of these terms. The weather remains in movement and the sky continuous, as the following ethnographic vignette will demonstrate.

Kali, the priest's daughter, had come and was calling for me. So I went up with her to the grassy hill. We sat in the cold wind and the evening sun and she cut needles from the fluffy little pines for bedding for their oxen. The mist meant the mountains stood out particularly well. We heard thunder-like sounds coming from the mining. There was an airplane flying past. Kali asked me whether you can see people from inside it. I explained it is like how we can see the small town from here; you see the general town but not the people. Then I looked up and at the blue sky surrounding us above in all directions. There were two lone birds which flew past in the hour or so we sat there. She agreed with me about how big the sky is, and said, I'll put you up there, then you can lift me up, and then I'll lift you up and in that way we'll get up there. And then god will look down and give us a hand up.

Kali was speculating about the sky that day, and about the connections between people, the air and places. Tsing has challenged us to see that '[p]laces are made through their connections with each other, not their isolation' (2000:330). These connections are fundamental to how we think about places. I would like to connect the weather of a specific place, the village of Gau, with the climate of the planet, not always easy for climate change scholars (Hulme 2010), hampered by the simplified planet that climate science depicts (Jasanoff 2010:236) and the implication that they are conducting research in order to alter carbon emissions behaviour (Haberman 2006:18).

Despite being part of a global and morally tinged discourse on climate change, the focus of this thesis is the particular village of Gau, with particular local weather processes and lives. This research is thus locally anchored, and possibly offers resistance to my attempts to render it global. With Tsing, I have found that there is something essentially flattening about statements made about the global. This thesis, therefore, remains a story about a place. Place is an anchoring concept in work on climate change (for instance Devine-Wright 2013), and in particular the non-exchangeability of particular weathers and places is worth noting. In the following

section I will explore the issue of place and its relationship with climate and weather. Although the specifics of the place of Gau in the region of northern India will be covered in the context chapter, I would like to make the connection between the local, that is to say the place of Gau, with the weather of Gau.

Weather and place

The previous section looked at the global and the local, establishing that, as Tsing pointed out, forces and places are both global *and* local (2000:352). The weather is a set of such forces. And the weather over time, i.e the climate, is also a key part of defining places. The climate of a place, since Ptolemy's *Geography*, had been defined by the place in which it was located, and during the 17th century scholars in meteorology and medicine started focusing on the role of people in changing it (Locher and Fressoz 2012:582). Climate characterises place. So India has a monsoon, Edinburgh is temperate and damp, and so forth. And the weather in turn is defined in the Oxford English Dictionary as the state of the atmosphere at a particular place and time. So they define each other mutually, the weather and the place it is in. The weather over time, (i.e. climate) of a place is inextricable from the identity of that place. Here I look at how weather identifies place, and later on at how, through seasons, weather marks time itself.

As Krauss stated, '[w]herever the anthropologist goes, climate change is already there' (2009:149). Thinking about weather allows the world and all the people in it – those people for whom climate change matters – to be considered in a single conceptual space. However, the impacts of climate change '*will fall unevenly'* (AAA 2015 emphasis in original). This is because weather systems across the world respond in particular ways to the changes in climate depending on a host of comple factors including local conditions. Though weather is in and of all places, then, issues of weather will differ according to locality.

This ethnography of one village approaches the question of climate change from the perspective of a weathered place. The village of Gau is in a landscape, above which

the weather swirls and dips, roars and flickers. Weather is part of the landscape: raindrops falling on leaves, wind causing dust to rise. And when the weather changes, so does the landscape. 'To perceive the landscape is [to engage] perceptually with an environment that is itself pregnant with the past' (Ingold 2000:189), including the weathering effects of past climate. With weather changing, the landscape could be said to move. Ordinary seasonal weather has this effect on places. They become different ecological and thermal spaces based on what weather is happening. Weather moves from place to place, usually in the form of seasons, but the climate of different places is also shifting with climate change. My work is local to Gau and the landscape and region around it, but the ground beneath, here as elsewhere, is shifting because the sky above is. This aspect of climate change has been compared with forced migration (Christian Aid 2007). That is to say humans and animals are becoming faced with new environments without geographically relocating (Cassidy 2012:24).

The interactions between weather, landscape and social and livelihood practices are specific to all places, whether or not they have a resident anthropologist. The landscape where this research was conducted, in the Indian Himalayas, reaches the fringes of the plains (south of Gau), as well as forested and unforested mountain slopes. Globally, the arctic, low-lying islands and coastal regions have become emblematic of vulnerability to climate change, while deserts and mountains have been understood as subject to destructive local land use practices such as deforestation, and thus associated with ideas of sustainable development rather than climate change (Orlove et al. 2014:249). The Himalayas is, however, not a region cut off from the climate that impacts on the arctic and low-lying islands, and has been named the 'Third Pole' (Qiu 2008), with reference to the importance of glacial water for the millions of people downstream in India and China. Changes in climate happening in the Himalayas include more rapid warming than the global average, and effects on rainfall, the monsoon and animal and plant habitats (Vedwan and Rhoades 2001, Convertino et al. 2013).

Place, as has been shown above, is a specifier of weather, and weather characterises place. The movement of weather in seasons and across geography is inherent in how

weather operates and impacts. The village of Gau, then, is both a place and a locus through which weather continually moves, suitable for a weathered ethnography.

So far I have introduced climate change and how it relates to the local, the global and place. In the next section I will first look at how I deal with the persistent idea that climate determines social forms. Secondly, I will explore my material approach to weather, and the politics and morality conversation, before I introduce the thesis with an overview of what it contains.

Climatic determinism

This thesis forms part of a growing body of work attempting to manage the risks of climate change. I posit that with a deeper sense of the pervasive, *drenching* and social implications of weather we can move away from unthinking trivialisation of it. With the weather changing in unpredictable ways, it is worth understanding how weather affects people's lives. What, in practice, does variable or uncertain weather mean? The weather is not simply external, affecting static lives. Even setting aside questions of climate culpability with regard to emissions, deforestation and road-building, the smallest actions in Gau of putting on a jumper or sheltering under the shade of a tree involved people actively modifying the effects of the weather on their lives and bodies. However, it does not follow that people in Gau would order the weather to their whim. The question of how to understand and express how weather impinges on lives without implying these to be passive is a delicate one. In this section, therefore, I attempt to untangle this problem and consider how it might be productive. I will look at the history of climatic determinism, how it was found to be lacking and how work in the social sciences has usefully applied understandings of the environment under the rubric of cultural ecology. Then I will lay out how I solve the issue of the relationship between climate and society for the purposes of this thesis.

Hippocrates believed that climate shapes society. He wrote linking seasons and the weather to illness in *On airs, waters and places* in around 400 BCE (Adams et al. 1881). Medieval scholars such as Ibn Khaldun saw causal connections between climate

and characteristics such as skin colour and social organisation (Boia and Leverdier 2005). British colonial views on health saw tropical climates, such as that of India, as unhealthy for Europeans (Naraindas 1996). Grove's (1995) work on European colonisers described how they sought to cultivate the sky by bringing the land under control. This was reflected in a colonial gazetteer from Sirmaur, the district in which Gau is located, where the vaporous and unhealthy climate of the then densely forested southern Sirmaur was correlated to land use: '[c]ultivation is, however, steadily spreading; and with the clearance of the jungle, the climate will approximate to that of the neighbouring Dehra Dun' (Hunter 1885:556).

By the mid-20th century, weather and other environmental features were taken to explain social patterns. Reyna's (1975) example of bridewealth in Chad may demonstrate how an analysis incorporates environmental information (although the classic example of a cultural ecology approach is Rappaport's *Pigs for the ancestors* (1967)). In this work, he showed how in years of higher resources, more sons may marry, and thus bear more children, who are better supported by the higher yields, while in times of scarcity men must wait to be married, and thus delay having children. But the explanatory power of climatic or environmental determinism was on the wane. Environmental determinism was found to be lacking because it could not account for differences between places with similar environmental conditions or similarities between places with different environmental conditions (Milton 1997). The idea of society being climatically determined leaves room for neither culture nor human agency, and the only history it permits is a meteorological one. Since this waning scholars have made efforts to reconcile this wider view with observations that weather does shape social life. 'Nobody can stop the weather'[1] I was told in Gau. Something, then, may be salvaged from the idea of climate having an effect on human lives and shaping the way these lives are.

In his article on the seasons of the Kemi river in northern Finland, Krause traced this problem back to the difficulty of having humans simultaneously socially constructing the world and determined by that world. The individual becomes half determined and

[1] '*mausam ko koi nahi ruk sakte hai'*

half involved in social construction, he observed (2013:27). To avoid this awkward approach, Krause took Harris' (1998) work on seasonal dwelling in an Amazon floodplain, based on Ingold's (2000:194-201) approach to temporality (Krause 2013:28). This is a focus that prioritises experience and practice to understand the relationship between people and the landscapes and 'airscapes' around them (Krause 2013:31). In this thesis, I will be looking at how weather shapes the lives of people in Gau, but not how it determines those lives. I will be taking the effects and impacts of weather seriously, but not to the exclusion of other features of people's lives.

Weather frames and even constrains people's possibilities of being. People relate to weathers they know like other encultured artefacts, part of the economy as well as part of social relations (Hornborg 2011). So seeing the biosphere or the stock exchange in isolation, not conceiving of the possibilities of being that might include both the biosphere and financial exchanges, would hamper our capacity to even approach climate change. Knox, with her interest in infrastructure, noted that '[t]he climate is not primarily a thing but a set of relationships' (2015:103), including the causative relationship between humans and climate change, and, I would add, other forms of weather influence such as deforestation (see chapter five). And what do anthropologists study, if not relationships?

To understand the nature of the human-weather relationship, and perhaps to sidestep the determinism issue, Knox used Barad's (2007) term 'intra-action.' Barad coined this word to describe the situation researchers of quantum mechanics found themselves in, *within* the world they were studying. Knox used it to look at the ways in which interplay between weather and people is not between two well-defined entities, but rather happens within the weather while the weather remains active, even pervading the actors' bodies (2015:103). The word *interplay* matters here; it is the 'co-respondence' (Ingold 2013) of the weather and people within it which characterises this intra-action. Using a different, useful, but in my view less precise term, Neimanis and Walker described intra-action: 'neither humans (replete with tools, products and prostheses), nor the meteorological milieu of weather patterns, phases and events, can be understood as *a priori* relata. Instead, it is through *weathering* — the intra-active

process of a mutual becoming' (2014:4), that the relationship between them is constituted. Barad's 'intra-action' allows for lives to happen in a world that consists of weather, but nonetheless permitting there to be other sides of life important to those living. The human body remains both vulnerable and capable.

Weather change, then, is not a one-way flow of atmospheric forces battering helpless communities, but an interplay of intra-actions by people in response to perceived risk over various timescales. Weather and climate have in the past been understood as determining society. This has been discredited, but there remain ways in which people respond socially to the weather, and they are not independent of it. The causalities and determinacies involved are delicate and situated in time and space, as I intend to demonstrate in this thesis.

People in Gau are in fact architects of how weather meets them. Their extra-somatic activities use tools, clothes and ideas to approach the world around them, beyond the limits of their skin. The extra-somatic activity of humans may reach the clouds, as in the case of anthropogenic climate change. The tendrils of meaning which are spun around weather serve purposes of world-building and sense-making, alongside more practical intra-actions. Each of the chapters in this thesis is about different extra-somatic intra-actions between people and the weather.

Material weather

Ingold wrote that the air has not been understood as *material* enough to be worthy of study (2010:132). Climate change shares this doubtful tangibility. In this section I show how weather is material. Weather can challenge antiquated ideas of the material environment, because it lacks tetheredness in place and time. Cold air penetrates bodies, rain soaks them, storms knock at houses. Weather affects emotions, bodily sensations and actions. Latour showed (1993) how 'modernity' has not succeeded in cutting humans off from the material environment, or in other words: 'the world is not set apart from us, as a series of objects confronting a knowing subject ... Material settings are thus internal to our social being, not external' (Gosden 1994:16). The

weather is inherent to the social being of people in Gau and I will establish this here in this thesis.

The approach of this thesis is material, starting from the vulnerabilities of the human and animal body to extremes in temperature, and moving on to dampness and the complex materiality of dust. The weather is tangible, for the body and also for the surrounding materials of life, including food, infrastructure and even visibility. It has material consequences and effects (Jerstad 2014:400). There is a risk, though, with a material focus, to ignore processes of becoming, when the 'liveliness, and capacities for perception and response [of things] are stopped' (Ingold 2012:428). The advantage of weather in this context is that it is defined by its movement – rays of sunlight, flows of wind and water. As weather, it has an inherent liveliness then, although writing about it does risk limiting it, resulting in a faded and imprecise image of its forceful, flowing vitality. In this thesis my aim is to retain a material depiction of weather in movement. Talking about weather bodies, Neimanis and Walker wrote that '[t]he ebb and flow of meteorological life transits through us, just as the actions, matters and meanings of our own bodies return to the climate in myriad ways' (2014:560). Coming from a position of feminist philosophy, they are talking about the same weather that I write about ethnographically. Weather affects as well as effects. It brings the materials of livelihood in Gau into being – ripening, drying, rotting and causing illness, as well as providing comfort. People, including the villagers living in Gau, are practitioners who follow the flow (Ingold 2011:211) of the forceful materials around them. Both these materials and the weather have movement and intra-active relationships as well as substance and characteristics inherent to them (Harvey 2015). In the following chapters these specific material relationships will be interrogated, cumulatively contributing to the elucidation of the material and social ramifications of weather, as they emerge from peoples' daily lives.

While some anthropologists have been interested in a symbolic approach to weather, describing, for example, how the colour black is associated with rain or gendered water (Frazer 1993 [1922], Hoeppe 2007, Sanders 2003), my readings of weather are oriented towards (socially imbued) material livelihood practices. Weather as a

culturally constructed system of reckoning is important insofar as people share meteorological maps of reality. However, these maps (i.e. the symbolic, cosmological, and cognitive dimensions of weather) are less of a focus in this thesis than the practices based on them.

Cassidy distinguished between material and conceptual issues with climate change when she wrote about the Sachs Harbor research project, which found that 'certain Inuvialuit research participants, ... told researchers that they were "lonely for the ice" (Berkes & Jolly 2001, p. 9),' which, as she noted, 'is a problem of a different order to that of unpredictable ice, which can be solved by hunting seal from boats' (Cassidy 2012:29). My focus in this thesis is weighted towards how people in Gau deal with the weather, rather than the emotional or conceptual responses to it. They deal with the weather in all seasons, and some of the issues they face arise from shifting climatic patterns, while some of them arise from the usual weather which nonetheless poses challenges for human social and material life. The world, as subject to the effects of human activities such as climate change, may be read as a set of material relationships, where the weather, bodies and landscapes meet.

There is also a political dimension to the material approach, which ties in to Ingold's critique above of the static description this approach risks perpetuating. Materiality has been apolitical, according to Appadurai, who pointed out (2015) that material analyses become inherently normative, because of their focus on things rather than the politically or morally charged flows they are caught up in. Climate change is a useful topic in which to counteract this analytical tendency, because it is inherently about change and movement, while being part of human politics and also firmly material (Knox 2015:107). In the next section I will detail briefly how politics and morality pertain to weather and climate change in the anthropological literature.

The politics of weather and climate change: a matter of morality

Anthropogenic climate change is a concern both for understanding of the world as it is (nature, weather, etc.), and for thinking about the world as it should be (Rayner

2003:277). Ideas around control, causation and culpability as relating to changes in the weather in general have made up a prominent part of the scholarly work on weather in anthropology and related fields. In this section I will cover these briefly, also making space for the talk in Gau around the weather going 'wrong' and being 'late.' Although this will not feature much in the thesis, it is relevant background material for placing weather-lives in Gau in a framework which involves weather that is not static, but subject to change.

In Hulme's piece on cultivating the sky (2015), he wrote about the sky as being the domain of the gods, and then latterly the domain of the external, 'scientific' climate, before becoming a domain of human action and intentionality with carbon emissions and the greenhouse effect. From the point of view of anthropological knowledge, these three domains are concurrently present in understandings of the weathered sky. Climate change is not the only way that humans have conceived and continue to conceive of the weather 'going wrong'. These accounts have expressed the culpability behind weather change in moral terms (Rudiak-Gould 2014, 2013, Gold 1998, Gold and Gujar 2002, Huber and Pedersen 1997:587, Douglas 1992), and the power to affect the weather as intertwined with political power (James 1972, Harrison 1988, Krige and Krige 1943:271, Gluckman 1955:38, Miyata 1987, Molnar 1994). India and other countries of the global south have contested their culpability when it comes to climate change in the light of colonial history – where western nations which became industrialised earlier have a longer history of emissions (Chakrabarty 2012), despite high levels of current emissions with for instance major coal and cement industries. The weather, then, is not something that just happens. It is to some degree malleable and often related to human culpability.

Conversations about the 'wrongness' of the weather are happening across the world. Scholars like Crate have been mapping people's stories of how the weather is 'going wrong', focusing on accounts of change, coping and consequences. She charted how the Vilui Sakha people of Siberia's capacity to adapt was being severely tested and even outstripped by the changes in climate, with the melt of the permafrost and the creation of new lakes leading to land no longer being productive for fodder (2008).

Various forms of weather change are being experienced, disrupt and are tackled by people.

Conversations about the weather going 'wrong' were also taking place in the village of Gau during my fieldwork, although the climate change terminology was not in use. The monsoon of 2012 was 'late' and so was the winter rain that year, coinciding with Pahari Diwali, a festival in mid-December that is supposed to take place after the planting of the winter wheat has been completed after the first winter rain falls. Because of this, the ploughing was delayed and the wheat not planted until after Diwali, meaning the harvest was also delayed and had to happen in the heat of the hot season, in May 2013. The monsoon onset of 2013, on the other hand, was unusually heavy. It was talked about for weeks afterwards, in terms of the fields that had collapsed, the boredom of being stuck inside, the force of the water that caused it to leak into houses and the inaccessibility of the plains due to landslides blocking the roads. This was a situation where the rain was matter out of place, out of appropriate time and season. When the rain arrived at the wrong time, was 'late' or 'early,' it dislocated the pace and pattern of life in Gau, undermining social correlations with agricultural markers of time. As in Crate's (2008) work in Siberia, where the milder winters and rainy summers have made fodder collection more difficult, the distortions in rain-time in Gau have far-reaching life ramifications. People in Gau did not talk about 'climate change' as such, but they did talk about the 'wrongness' of the weather. This was often couched in terms of the rainfall, as well as the lack of snow in winter and the warmer hot and rainy seasons. This 'wrongness' could be seen as even a kind of 'pollution' of the seasons and of timekeeping itself.

The weather is morally weighted, in Gau and elsewhere. In the bigger picture, the research on weather as moral is part of the same conversation as that on climate change, which is why this project was undertaken. So, although this thesis does not pursue issues of morality and politics, I hope to have established the fundamental relevance of them to weather and climate change research more broadly. This concludes the broad theoretical framing of the thesis.

Thesis structure

Having positioned this work in the literature on climate change and weather, I turn here to the thesis structure, which is by season and by scale. This thesis is both an ethnography of the village of Gau and an exploration of how material weather relates to human lives. In it I use the ethnography of weathered lives to think about larger climate questions. The climate change debate in the UK has largely been globally or regionally focused and not connected enough, I would argue, with the places where people's lives play out. The weather is an integral part of the background of resistance and texture on the basis of which people live. Weather is simultaneously comfort, risk, and productive of nourishment, sensations and social relationships. I will describe in this thesis how the narrow implications (feeling cold or getting wet) of weather have wider ramifications (i.e. patterns of work, house construction, neighbourly relations). Social structure builds up in dialogue with weather. This thesis thus describes how the problems of weather could even be said to produce people's lives. And through doing so, it aims to illustrate the 'existing ... problems' which anthropogenic climate change 'magnifies and exacerbates' (Crate and Nuttall 2009:11).

Weather marks seasonal time (Olwig 2005). This thesis is structured along seasonal lines and here I discuss how seasons have been understood in anthropology. Concepts of time function to stabilise society in the present (Pocock 1976:314), as well as to conceptualise cosmic problems. Seasons have thus been seen as an element of social structure. The Nuer, Evans-Pritchard wrote (1940) moved across the landscape in seasonal patterns because of the changing fodder environment of the wet (flooded) and dry seasons (except when settled by the colonial administration). They went where fodder and water were available for the cattle at different times of year. Since Evans-Pritchard's highlighting seasonal dimensions to social life there has been much work done on the relationship between nature and culture. More recent work, such as Harris's (1998) on lives on the Amazon floodplain and Krause's (2013) on communities along the Kemi river in northern Finland, brings together an appreciation of the ramifications and the shaping power of seasons. Krause wrote about the river understood as inherently seasonal:

> River dwellers regard none of the various forms the river assumes during the year as primary. The river is the one flooding its banks, the one so dry that rocks and sandbanks are exposed, the one covered in a thick ice crust and the one of swiftly flowing waters (2013:35).

At all times the landscape contains these possibilities, and the taskscape echoes this. In the same way that the hillsides and trees around the village of Gau have different visages in the different seasons, they also have different locations that are better for certain tasks in different seasons. For instance, the windy slopes would be used for gathering fodder in the hot season and the sun-warmed sheltered ones for the cold season. Those closer to the village would be used for the rainy season when one must dart out for fodder between rainfalls. Krause wrote about the activities undertaken by those he worked with as having a 'right time' and that each are appreciated for their benefits by people in Finnish Lapland (2013:37). Other work on seasons includes Wadley's 'The rains of estrangement' (1983), Palang et al.'s review of landscapes as seasonal (2007) and Nicholas' work on the ritual year in Bengal, where he connected rituals for goddesses of cholera and snake bites to the times of year when these were most likely to occur (2003:18).

Understanding seasons as formative of the whole shape of social as well as agropastoral life lies behind the choice to structure this thesis according to seasons. It is the seasons which are threatened by climate change which constitutes a fundamental threat to the nature of things. The weather never stops, but is also recursive; it returns seasonally. Seasons make up part of the involvement people have with weather. The sky is made sense of in the orderly succession of the seasons.

There are three sections in this thesis: one for the cold season, one for the hot season and one for the rainy season and the air, completing the yearly cycle. In Gau the terms for the hot (*garmi*) and cold (*thand*) seasons were the same as those for the feeling of

hot and cold.[2] *Barish* is rain, and *barsaat* the monsoon, although in Pahari *chammasa*, also denoting monsoon, means four seasons – hot, cold, wet and dry all in one season. Weathers and seasons in Gau are co-constituted. So the seasonal structure of this thesis and also the focus on the hot, cold and wet as the main weathers rather than for instance frost or wind, come from the way people in Gau spoke about these weathers/seasons. The seasons are not another kind of calendar, they just are. The sky is always there, above. It rains, it is cold, it is hot. With the heat comes the yellow berries, with the rain come mushrooms, in the cold the citrus tree fruits and it is pounded up for a sociable snack with salt, chilli, dark sugarcane sugar and fresh coriander leaves.

The second axis along which this thesis is structured is one of scale, where the first cold season chapter focuses on the level of the body, the second expands to the family, the first hot season chapter brings in the domestic animals as part of the household, the second hot season chapter jumps to the level of the village and neighbourly relationships, the rainy season chapter goes beyond the village with migration and infrastructure and the final chapter deals with the air and climate, which is global as well as local. By filling in some gaps and providing some linkages – between the body, the household, animal members of the household, the house and neighbours, the village and the wider world – the weather provides an occasion for sparking off new thoughts and connections in the larger project of understanding how people live in the world.

Summary of chapters

The fieldsite will be introduced in the next chapter, which covers the regional literature and describes the village of Gau, the setting for the rest of the chapters. Also in this chapter is the methods section which positions me as a researcher, recounts how I did fieldwork, discusses some of the issues around gender, access, ethics and anonymity, and the place of the knowledge that I gained through this fieldwork.

[2] Occasionally the term *sardi* would be used for the cold season.

The first ethnographic chapter is one of a pair about the cold season. From early November until late March, the cold weather, particularly at night, would condition how people in Gau lived and worked. Actions (drinking water, leaving the fireside) would be evaluated with reference to the risk of illness from the cold. In this chapter the talk around my own body and the causes of my illnesses in the first months of fieldwork serves to introduce how the cold would be considered a socially safer source of risk compared with for instance food, which was associated with witchcraft. Then the chapter moves on to the major cold season wedding in the village, which serves to draw out the social dimensions of this risk of illness in the cold. People in Gau used the risk of illness in the cold among other sanctions to manage their disapproval of the family who were gaining a daughter-in-law. This chapter will establish the material nature of weather in relation to bodies, their actions and care, and immediately renders this social, through the opinions, causality and so forth around the risk of illness and the way the cold weather formed part of villager negotiations in relation to myself and the family whose son was getting married.

The second chapter of the pair about the cold season builds from this risk of illness to what people in Gau would do to alleviate the cold. The problem with illness is that it means people cannot work and do their part for the household. In doing village work, however, which mainly involved outside activities such as clearing out the manure, going to cut fodder or weeding the wheat, people would warm up. This chapter establishes the work that made up life in Gau for those that did not migrate to work elsewhere. This was absolutely necessary activity, bound up in membership of the household to which one contributed and from which one was fed. The gathering of fodder that would happen throughout the year outside in the weather is work that characterised life in Gau, and which I will return to throughout the thesis. The household brought together people, property and tasks and was a fundamental social unit in Gau, inextricable from the labour activity that occupied its members. In this chapter, then, work and household come together to show what life in Gau was like, and how people dealt with the winter cold which carried the risk of illness.

In the third chapter I move on to the hot season. Here the household is expanded to include the dairy buffalo and cows for whom the fodder collection described in the previous chapter was done. Much of the work in Gau was to sustain the dairy buffalo, who in turn sustained people with their milk and their manure for the crops. The animals, though, were susceptible to the heat (as well as the cold), and required particular care for their thermal regulation, as well as against predators. Their bodies being subject to the same weather issues as the bodies of people, many of the remedies were similar. In this chapter the relationship between the women and the buffalo is examined according to the literature on human-animal relationships. The question of the buffalo being seen as analogous to slaves, as in fact taking advantage of the labour of women, or as in a mutual partnership of sustenance comes from this literature. The issue of the milk, which is in some sense shared between them as nurturers of their offspring, but then also not shared because the buffalo are not fed human milk, is brought to bear here. The importance of the animals, and in particular the buffalo, for life in Gau, in terms of time spent as well as in how women saw the bovines, cannot be overstated. This chapter continues the theme of the risk of illness from excessive temperature, in this case the heat.

The fourth ethnographic and second hot season chapter concerns the built structures in Gau, the houses in which the households are located. This chapter is about the older stone and wooden houses and their thermal properties and the contrast between these and the new cement houses, with rather different thermal properties. The stone ground floor and the thick slate roofs of the wooden houses would provide a cool darkness during the hot season, alleviating the heat of the day, when people would retreat to rest inside. The issue of cement building is a matter of climate emissions as well as of inefficient thermal regulation, while simultaneously being part of the cash-commodities-modernity aspirations of people in Gau. Building a cement house was thus an outward-looking act, one that upset relationships between neighbours because of the more closed nature of the house when compared with the older wooden ones, as well as the display of cash wealth. In the second part of this chapter the offer of the house as shelter in the heat to fellow villagers passing by is examined as a social reference to the alleviation of heat, although in practice rarely taken up. This form of

greeting was disrupted by the cement houses, with their walls facing the path, closing off the village from itself. In this chapter I acknowledge, not only the importance of infrastructure in how people relate to weather (a theme continued in the following chapter), but also the conflict which characterises social life and that circumscribes the social possibilities for heat alleviation in Gau.

In the fifth ethnographic chapter I turn to the monsoon. The rainy season in Gau is still warm, and characterised by uncertainty of movement both within the village for fodder and to tend the labour-intensive maize and outside of the village for waged labour. The risk of illness meant that people would not go out to work during the rain, and so must take their chance between rainfalls to do the heavy work of the season. The rain would mean frequent landslides, which blocked the roads and meant that movement outside the village, for work, study or to visit the villages where married women had grown up, became contingent on the road remaining clear. The story of Lalita, a new bride in Gau whose migrant worker husband was stuck in the village for three days because of landslides and whose natal village is in the process of sliding down the mountain because of the effect of rain on the hillside, runs through this chapter. The vagaries of the weather during the monsoon after four chapters on structures of life in Gau in relation to the seasons brings us back to the movement and uncertainty that characterises weather, and in particular in the context of climate change. This chapter moves beyond Gau to the extensive, though seasonally fragile, links with the wider region. Not only the roads and labour migration, but also water, electricity and traded goods connect the village to the world around it. And villages like Gau remain connected, but also subject to the weather that means people must adjust, to the disruption of opportunities for movement, and even to the shifting downhill of an entire village.

The final chapter continues this theme of movement, and seeks to link the weathered lives in Gau to the global idea of climate change. The idea of pollution serves here as a bridge, with matter out of place having local as well as global salience. The importance of this has been established in this introduction, and with the ballast of the first five chapters on weather in Gau, there is some foundation for the broader links I

make in this last chapter. The movement of weather is key to this local-global connection. Through looking at different kinds of pollution, including vehicle and factory pollution, caste pollution, mist, dust and the pollution of excess carbon in the atmosphere, all variously visible and with moral undertones, I bring the social materiality of the air and the substances in it to connect Gau to the world, with which it shares the weather and the air through which the weather flows.

Before starting on the ethnographic chapters, however, I must establish the village of Gau in its context, and lay out the methods of the fieldwork on which this thesis is based.

Context and Methods

A. The Pahari village of Gau in context

In this section I will briefly introduce the fieldsite, its region, history, landscape, weather, agropastoral economy, religious practices and kinship system. The second half of this chapter covers the methods and ethical considerations of the fieldwork.

Fig 1 Map of India, showing the western Himalayas which border China and Nepal (Bartholomew 1935).

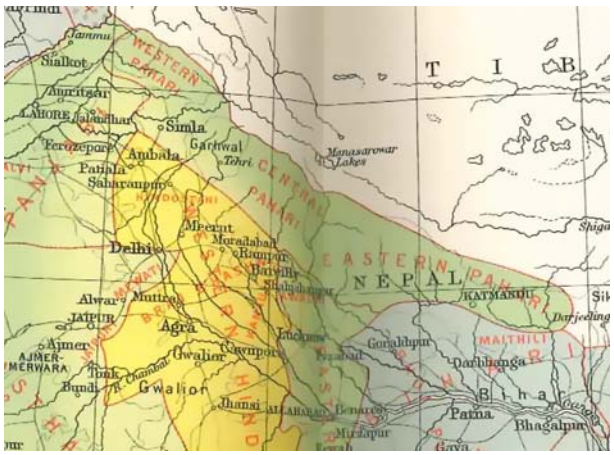

Fig 2 Map of the Pahari region. Gau is located between Simla and Garwhal, i.e. between western and central Pahari on this map. From plate nr 13 (Hunter 1909).

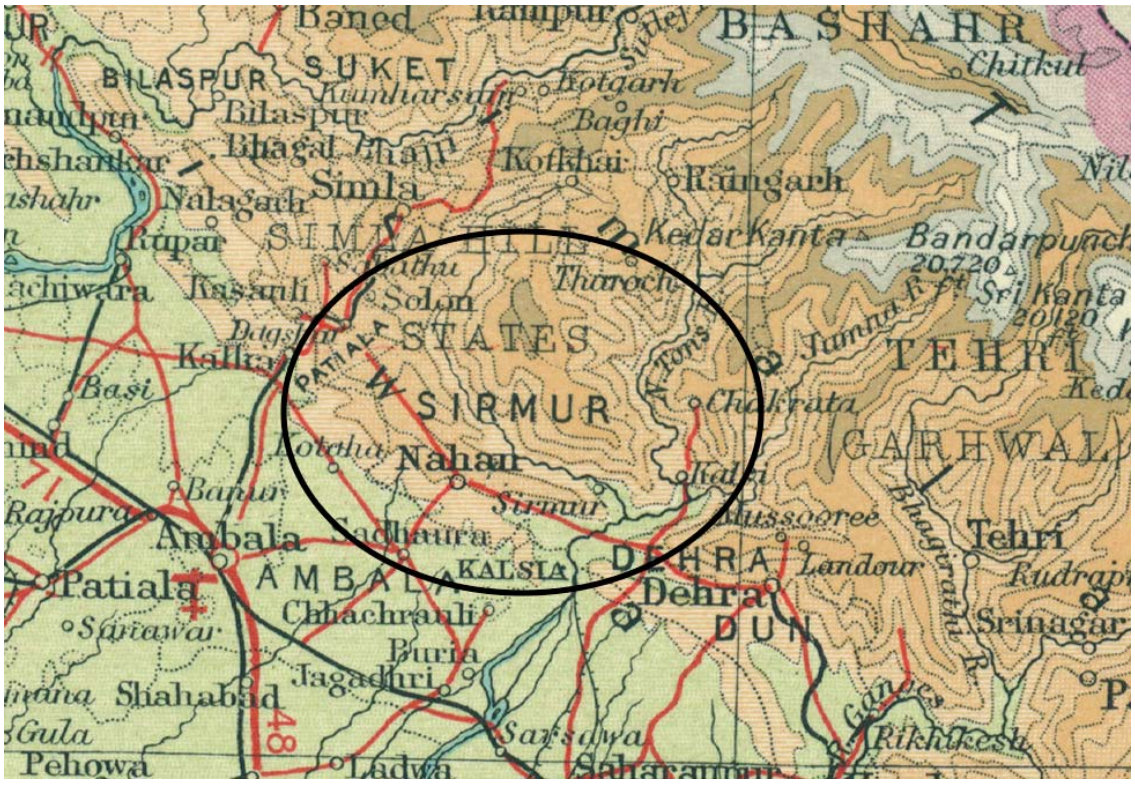

Fig 3 Excerpt from the map of India above showing the district of Sirmaur (spelled Sirmur), with district capital Nahan. Also the Tons river, which divides Himachal Pradesh from Utterakhand state, Dehradun the capital of Utterakhand state and Landour, where I learned Hindi. Note the plains/hills distinction, running along the southern borders of both Sirmaur and Utterakhand (Bartholomew 1935).

The region in which Gau is located

The village of Gau is remote in the sense that it is not on the road to anywhere, and so remains an out-of-the-way place. It is located in South Asia, in the foothills of the Himalayas. It belongs to north India linguistically and in terms of folklore and religion. It is in the district of Sirmaur, with around half a million inhabitants according to the 2011 census. Sirmaur lies in the southernmost corner of one of the northernmost states in India, Himachal Pradesh. From 1864 the British rulers of India would take the apparatus of ruling to Shimla, now the capital of Himachal Pradesh, every hot season. Because of the transport system, education and jobs this provided it has remained a state with relatively high levels of education and employment, although roads are better in wealthy Punjab which borders it to the west. The village of Gau also belongs to the mountain region of what van Schendel (2005) has called Zomia. This is an idea that initially covered the mountainous areas of central and northern Southeast Asia, including Myanmar and the Chinese province of Yunnan, and was later expanded to include the Himalayas further north and west. Van Schendel intended the concept to express a commonality of these mountain peoples which transcended national boundaries. His proposition was later criticised as overly focused on ecological commonalities at the expense of political histories (Shneiderman 2010:298). Mountain communities have in common that they may be somewhat inaccessible and thus harder to govern, or might choose to keep the state at bay in various ways (Scott 2009).

The district of Sirmaur is a Pahari district and Gau is a Pahari village. *Pahar* means 'mountain' in Hindi (see Kumar (2000:177) on the dialect status of the mostly unwritten Pahari languages, which are related to Hindi). The Pahari region stretches from mountainous north Pakistan in the west to Nepal in the east, with Gau in the central Pahari region. Berreman, who did his doctoral fieldwork in the late 1950s, is perhaps the most famous anthropologist to have worked with Paharis. He observed that:

> [t]he populations of this area, collectively termed Pahari ("of the mountains"), comprise a variety of subgroups which share basic cultural patterns but show local

> differences in such features as dialect, ceremonial forms, deities worshipped, house styles, dress and ornamentation, range of castes, and rules of marriage (1960:774).

Although varying across the region due to different histories of colonisation, economic activity, and more recent national politics such as the formation of the Pahari state, Utterakhand, in 2000, Pahari people who I spoke to identified with other Paharis as opposed to Buddhists to the north in Himachal Pradesh or the plains people. The contrast between the hills and the plains was taken to be self-evident, with the plains spoken of as an urban place of ease, comfort and laziness. People down there are educated, the people of Gau told me, but the weather is too hot and nobody works (i.e. does agropastoral work). The plains people in turn, when learning I intended to live or was living in a mountain village, would talk of hill folk as backward and marvel that I could live among them. For many of them villages like Gau occupied a hinterland which, although geographically elevated, could be considered a desolate edge zone of uncouth and insignificant ruralites (Humphrey 2015).

Mathur did fieldwork in neighbouring Uttarakhand, in a small town where educated men who had been posted there considered themselves to be enduring the remoteness until they might be lucky enough to gain a post back in Dehradun, the state capital (2014). Like Mathur's bureaucrats, in Gau one physical education teacher from the plains sighed with the sense of his exile. This may, of course, not have been the experience of the villagers who had opened shops in the small town where Mathur worked, or of young people going to school there. For people in Gau the label of remoteness came from officials visiting or from relatives returning from work in the army or from living in town. Gau is a remote place like Ardener's corners of Cameroon, which 'when reached ... seemed totally exposed to the outer world: they were continually in contact with it' (2012:524). Peddlers would come to Gau selling plastic and steel kitchenware and buying scrap metal. Traditions of trade stretching back to the Silk Road attest to the movement across these mountains. I will return to movement in chapter five.

Paharis as villagers or tribals

At Indian independence in 1947, like many other small kingdoms in India, Sirmaur became a district in Himachal Pradesh, one of the administrative units known as states which make up the federal structure of India today. The small hill kingdom of Sirmaur dated back to 1095 according to its annals of succession (Kapur 1934). Like rulers elsewhere, as covered in the section on politics and morality of weather in the introduction, the king of Sirmaur had responsibility for the weather, learning as a child his duty to ensure that 'the astrologer [he has] employed [is] competent in ... neutralising the disturbances of Nature' (Thacker 1901:27-8). In the early 19th century the Gurkhas invaded from what is today Nepal and the Rani (queen) of Sirmaur called on the British for aid. The British attacked the Gurkhas and gained Sirmaur as part of their peace treaty with the Gurkhas in 1815. The British placed the Rani as regent for her son, but retained some areas now in the neighbouring Utterakhand state (Kapur 1934:18). The royal family still owns the palace in Nahan, although they reportedly live in Jaipur. Across the Tons river in British-ruled India, roads and schools were built sooner than in Sirmaur. For many years this region was a mountainous corner of Uttar Pradesh ('United Provinces' under the British), but agitation by the Kumaoni and Garwhali Paharis resulted in a separate state being established in 2000. In the corner of Utterakhand that borders Sirmaur is the region of Jaunsar-Bewar which is officially classified as tribal, and where some of the women in Gau had grown up before marriage. Women in Jaunsar-Bewar still wore the heavy floor-length skirts and blouses that had previously been the norm in Gau until the plains uniform of the *salwar kemeez*, a tunic top over baggy trousers took over some decades ago. In the opposite direction is Kangra, where the Gaddis achieved tribal status in 2002, in what Kapila refers to as an emphasising of distinctiveness in order to achieve integration into the state (2008).

Towards the end of my fieldwork a set of cars arrived at the village school and a woman from the Tribal Studies Institute in Shimla assembled the villagers, particularly the married women, some of whom had come from Utterakhand. She asked them about clothing traditions and how similar they were to the people of Jaunsar-Bewar in Uttarakhand, who had been granted tribal status. This was part of the process of an

application for tribal status for this region, which would apparently bring more ration allowance per household in the ration shop, and more quota places at colleges and in government employment for people from this area. The quota system was established in India to rebalance the unequal access of low and high status groups to government jobs and education. 'Untouchables' – Hindus without caste – and tribals as well as other low status groups known collectively as Other Backward Classes, have official rights to these quotas (Galanter 1984, Dirks 2001). Often, however, it is the elites within each of these groups which end up benefiting from the quotas (Parry 1999). Gaining tribal status also allows for separate administration of their land, forest and water, once the tribal area becomes a Scheduled Area and thus nominally protected from, for instance, extractive industries (Shah 2010:18). However, what constitutes tribal status according to the Indian authorities may not actually be all that different from what defines a peasant, argued Béteille in an essay called 'Tribe and Peasantry' (1974). The criteria used by the Indian government to define tribals, including isolation, form of Hinduism and means of livelihood, could be used to describe peasants anywhere in India, he stated. According to Berreman:

> [t]hey are not tribal people in any conventional sense of that term. Rather, they are hill-dwelling Hindus who, though undoubtedly rustic by the standards of their plains-dwelling countrymen, share much of the tradition of North Indian village Hindu culture (1960:775).

So perhaps for anthropological purposes the question of whether or not Gau is tribal might be set aside for a closer look at how this study of Gau could be placed among village studies in India.

As Béteille, the prominent Indian sociologist, remarked twenty years ago, '[village studies] are still of very great value ... for the insights they provide into social processes, social relations, and social institutions' (1996:232). In looking at the weather in a Pahari village like Gau, this study retains the core focuses of all village studies, on livelihoods, social relations and change. However, rural anthropological studies in South Asia such as that of Srinivas in south India (1976) or Raheja and Gold on women's oral traditions (1994), have increasingly rubbed shoulders with work on

industrial and bureaucratic settings (Parry 2003, Bear 2007, Cross 2014) and the expanding middle classes (Jeffrey 2010, Heslop 2015).

Despite this shift in research focus, the Indian village remains home to many of the world's poorest people. In 2008, out of the ca. 1.1 billion poorest, 49% lived in India and China (Sumner 2012). Most of the world's poor are small farmers, who, like the small farmers in Gau, combine self-provisioning with trading crops (Quan 2007). Because of the steep mountainous landscape it would not be possible to make large commercial farms in the area around Gau – even families who can afford tractors could not use them as they would not be able to reach the many tiny terraced fields. And, according to Srinivasan (1972) and Barrett (1996), subsistence farms produce more per hectare than large commercial farms. Lipton argued (2013) that given the labour-intensive, capital-scarce situation in places like India, subsistence farming is an efficient way of feeding those at risk of food poverty.

The Indian village was a Gandhian icon, and remains the basic level of rural administration in India today. The British colonial government instituted the *panchayat* system, a revamping of traditional village rule in a council of elders, now elected and subject to caste and gender quotas. The *panchayat* under which Gau fell united several larger villages for political purposes. Women were in principle entitled to attend the *panchayat*, but did not often do so; the sister-in-law in the household where I lived was nominally a member, she only went, Anupriya told me, when there was something to sign. The scheduled caste men who had quota positions did go to the meetings, but at the meeting I attended they stayed silent.

Simpson summarised research on the Indian village (2015), stating that:

> Some suggest the village has become a "waiting room" for industrial labor markets; for others the village has withered or even died. What has emerged has been described as an urban-rural continuum. Other neologisms (some of which are no longer that new) include, peri-urban, ex-urb, the fringe city, vicinities or vicinage, and hermaphroditic and in-between sprawl: the rurban!

Gau fits into this sometimes awkward space. It continues to be a village, but does not therefore remain unchanging. In chapter four I will draw out this tension within the village, before considering migration directly in chapter five, with new materials and technologies cohabiting with the sickle use and oxen ploughing which stand as widely acknowledged symbols of peasant life.

Weather, housing and livelihood in Gau

Fig 4 The village of Gau

Gau is situated towards the southern edge of the Himalayan mountains, just a few hours bus ride along atrocious single-track roads from the plains. Nevertheless, there are mountains in every direction, and the main spatial coordinate is up or down, which has implications for temperature, visibility and moisture levels. The weather in the village was most frequently extolled by its inhabitants as 'not too hot, not too cold' in contrast to the 40 degree plus summers of the plains and the snowy mountains further north. In specific situations, though, heat, cold and excessive or absent rain were complained about and the general trends of year-round warming and heavier but less

reliable rains ubiquitously acknowledged. Clouds from the south, particularly the southeast, bring the rain, I was told. Never from the north. The mountains mean that the different villages around Gau had quite different climates, one windy, another misty, a third sunny. Those on the north face of the mountain would tend to be colder and those facing south get more sun. The year I was there winter rain was irregular, arriving 'late' and disrupting the celebration of hill Diwali, and then coming less regularly than usual. Both monsoons I saw were experienced as unusual, one 'late', the second particularly heavy. People in Gau would navigate the weathered landscape by going to the sunny hillside on cold days or sheltering in the porch of an animal house during cold hail.

Around Gau there were limestone mines for cement production cut into the mountainside, rocky slopes where old landslides left the hill barren, and forested or reforested areas (with mono-cropped pine or eucalyptus). Closer to the village were the grassy pastures and closer still the tiny terraced fields, around which trees would be seasonally pollarded for fodder. The village of Gau originated, I was told, when two brothers came from the north, from the mountain where the village deity goes on pilgrimage. One of them died on the journey but the other arrived and founded the village down where the low caste houses and the animal houses are now. Stories like this would be told through the songs sung on occasions such as weddings in Gau to accompany dancing. The village consisted of forty households, with around three hundred inhabitants according to the 2011 census, a proportion of whom would migrate out for work. Chapter two goes into what is involved in a household in more depth. Many households had their own house, some divided a larger house between them, with rooms allocated to each household and each with their own cooking space. Because of being on a hillside, each house would overlook the one below, with the slate courtyard in front where most work happened at the level of the roof of the house below. In addition to these houses were the *baas*, houses away from the main village, some inhabited by family members, others housing animals or just used as a base to rest or cook for when working in faraway fields. This system was described by Berreman as follows:

> In addition to a nucleated settlement adjacent to a concentration of village lands there are temporary-cum-permanent dwellings on widely scattered and often distant agricultural and grazing lands. These are thought of as part of the village even when other villages intervene (1960:777).

Fig 5 Woman with oxen at baas (photo: Georgiana Keable)

There is a government school in the village up to class 8, the final year of upper primary, which is free and compulsory in India. This school would fluctuate in popularity, with people periodically preferring the private school in the next village. There is also a bus stop only 20 minutes walk away. A stream below the village would fulfill water needs when the government-provided pipe runs dry in the hot season. Every house has electricity for light (the English word 'light' was used to denote electricity – as in 'the light has gone' to mean a blackout), and to charge mobile phones. The latter were taking their place in village life. One of the girls in the village told the following joke:

> A child was born and said to the nurse: 'do you have a phone?'
> 'Yes,' said the nurse, 'but what do you want with it?'
> 'I want to give the stomach a missed call that I have arrived,' said the child.

The ‘green revolution’ brought India’s small farm agriculturalists such as those in Gau into habitual use of modified seeds and fertilisers (Cleaver 1972, Evenson and Gollin 2003, Frankel 1971, Parayil 1992). The terraced fields around Gau would produce two or three crops a year (wheat, maize, tomato, ginger, mustard, beans); buffalo and cows would be kept for dairy, and goats for meat. Some, like tomatoes, were cash crops, and buffalo milk would also be sold by some households, to government dairies or privately owned tea shops. Work would be fairly continuous for both men and women, unlike in Uttarakhand, where men would do much less agricultural work (Mawdsley 1998:43, see also Dyson 2010 on children’s work in the region). Many families kept stall-fed goats, but only one (low-caste) family had a small herd. The old ladies told me that they used to herd goats and sheep when they were young, before children started going to school. They still had one or two old woollen garments and blankets from the time of sheep, and I once saw an old man in a neighbouring village repairing a fishing net, but clothes these days would be synthetic or cotton, from town. As in Utterakhand, women of different castes in Gau would do largely the same kinds of work (Mehta 1996:190). Labour, including fetching firewood and fodder, milking, carrying manure and washing clothes, would happen outside. Water was carried in order to clean dishes and bodies, bundles of leaves and green or dry grass were shifted for the consumption of the cud-chewers, which they would process into white milk, red meat and black manure. Chapters two and three go over this in more depth.

The issue of caste is one that straddles religion, social organisation and livelihood. Gau was organised according to the low-high caste division (see Dumont 1970, Marglin 1977), with most households Rajput, and only two Brahmin and six low-caste households. An important difference between Paharis and the plains situations was that in villages like Gau there is little distinction made within these groups. So Rajputs are distinguished from Brahmins, but sub-castes are not marked, and marriages would occasionally happen across this divide (although I did not hear of cases where it happened across the high-low caste divide). However, caste as identity (Dirks 2001) remained present, now in conjunction with the potential tribal label, and other modes of social organisation, such as the clan. The economic and ritual relationships between

castes known as the *jajmani* system was described by Wiser (1936) whereby each caste, specialising as for instance the barber, would provide services for the rest of the village and be repaid in kind by other service castes and in grain by the agricultural landowning castes, typically Rajputs. Payments in kind at harvest time to village specialists in Gau, however, were less than before, one village drummer (the caste did both tailoring and drumming) bemoaned to me. And the landowning Rajputs were finding it harder to employ the lower caste or less well off as labourers, since factory work and other waged labour provided better pay. Further west in the Pahari district of Kangra, Baker found that community management of irrigation continued despite the increasingly diversified income forms, linked to the importance of growing rather than buying food grain (2005). Most households in Gau had mixed economies (see chapter five for more on this).

Hill Hindus

North India is predominantly Hindu. Hinduism varies across the region in terms of which deities are worshipped, but tends to retain features such as worship in the household (Fuller 1992). Although Punjab to the west has Sikhs, Muslims and other religious groups, Paharis are mostly Hindu, to which, wrote Hunter in a 19th century gazetteer 'is added the superstitious adoration and dread of innumerable local divinities, with which the imagination of the people has peopled every hill, and valley, and grove' (1885:555). The diversity of deities Hunter described is, in fact, usual for Hinduism today (McDaniel 2003:1, Berti 2009). In Gau there were two temples, one for the god Shiva, one of the three major gods of Hinduism, worshipped across South Asia (Flood 1996), and one for Tara Devi, the goddess. Both temples had been done up with fancy tiling, but the old stone deities had been placed under the tree in the temple courtyard of the Shiva temple. Every household in Gau was affiliated with a priest from another village who would come twice a year to claim his allowance under the *jajmani* system of flour and other goods. The first day of every (Hindu) month people would go to the temple with a little grain and a coin (talked about as *chand*, silver). The low caste people would later receive that grain. After the end of the month

the men would make a special *roti* (bread) for the god Kwaja, and give it to him at the water source, so that the buffalo may give good milk and people not fall ill.

When a boy is born in Gau the whole village visits that house, to give ten rupees to the mother and then squeeze into the largest room where the men would sing songs. As will be described in chapter one, people in the area around Gau would not give dowry but rather brideprice and gifts of gold from the mother's brother to the bride, as a sort of insurance should anything go wrong. Women would not attend funerals and the bodies of the dead were taken down to near the river and burned by the men. In mid-December Pahari Diwali would be celebrated, a month later than in the plains, to correspond with the end of the planting of the winter wheat. Diwali is known as the festival of lights in the plains, but in Gau it was a smaller celebration, where the village came together to dance around a fire and the children caught walnuts thrown in the air. In mid-January the goat sacrifice, which had to happen in each household, was a large festival. I was told that people used to kill more than one goat when they had herds of goats and sheep. At this time the women would visit the other households in the same clan to eat tiny bites of the meat and drink strong locally brewed alcohol, both of which served to keep the villagers warm in the cold of winter. In April and October the nine days of fasting, Navratri, literally 'nine nights', were celebrated. Not all villagers would fast, but many unmarried girls did, hoping that they might get a good husband. One girl in particular was known for not breaking her fast in the evening with ordinary food, but eating only potatoes for the duration of the fast. Vishu was the spring festival at the end of April, which involved fairs or *melas* on the school grounds of every village. Every house was cleaned out for the start of Vishu, and at that time everybody who could afford it got a new suit of clothes. At the end of August was Shivratri, the festival celebrating Shiva, when I went with the unmarried girls to visit a temple on the hill for them to pray for good husbands.

Some years a group of villagers would take the village deity by car to Haridwar, a town south of Gau, for it to be bathed in the holy water of the Ganges, I was told, and some years they would take it to the mountain pilgrimage to the north. This would depend on a household or several wishing to sponsor the trip. The year I was in Gau, however,

towards the end of August, they conducted a ritual that only took place around once every twenty years, once every generation. It is a performance of the conflict between the Kauravas and the Pandavas, with each village representing one of these sets of cousins from the Hindu mythological epic the Mahabharata, as well as a ritual of fertility to renew the blessing of the goddess on the village (earth was taken from each clan's fields to the temple). A string was tied around the whole village and, for a few weeks, those inside were not supposed to leave. Or if they left, they could not return within that period. Nobody was supposed to visit from elsewhere, and when a young man came from the neighbouring village (cousin to at least one of the families in Gau), he had his hair cut symbolically – he should properly have been killed, Karishma told me. This kind of hair-cutting was attested by Vidal (2006:139) to stand in for beheading in a study of feuds in western Shimla district, to the north of Sirmaur. Also see Sax (2006) for an account of this ritual from another village in the region.

Fig 6 Procession of men waving weapons during the major ritual in August 2013

Possession by deities would occur at any time. Once the 18-year-old boy in whose room I slept became possessed at around three o'clock in the morning. It would also occur at regular times, such as at rituals or when someone was summoned to go into

trance and answer questions in an oracular fashion. This might be done for instance when an illness would fail to get better, or in the case of other difficulties. The question of whether the spirit doing the possessing was a deity or something less benign was always murky, because other spirits may well claim to be the goddess. Much of the literature on possession concerns women, particularly young women, and links it to gender inequalities of power (Saxena 2013, Fuller 1992). Kali, a girl in Gau, used to get possessed a lot, I was told, and her family had to do things like get her new clothes. On one occasion a girl was possessed during a temple ritual when several others were also possessed and, according to her, the goddess was demanding that the small shrine on the hill be expanded into a proper temple. On another occasion, during the ritual mentioned above, a girl was possessed and demanded that the girls be permitted to attend the ritual.

Fig 7 A girl in oracular possession, answering questions

In addition to practices such as possession and ritual celebration, the people of Gau would use the temple and the small shrines in their own homes to interact with the deities, by burning incense and waving it in front of a small image. An old blind lady, for instance, told me about the loss of both of her elder sons and said that she had gone

to the temple to ask that the last be left to her and he was. 'That is why we *mante* [obey, respect, accept] God,' she said. In daily life the women I spoke to were generally preoccupied with orthopraxy such as refraining from beef-eating, rather than orthodoxy such as belief in particular deities, when determining how acceptable I was in religious terms.

The kinship system was also talked about in Gau in relation to the Mahabharata, which Zoller (2014) collected a version of from this area, and in which the five Pandava brothers are married to a single woman, Draupadi. Villages in the area, as noted above, were affiliated with either the Pandava brothers or their Kaurava cousins and enemies. Marriages would occur between these villages, rendering married women suspect at important ceremonies because some of them came from villages associated with the Kauravas.

Polygynandry and bridewealth – an unusual North Indian kinship system

Berreman wrote in *The Hindus of the Himalayas* (1963), about the fraternal polyandry and what he called the polygynandry practiced in the area, that is to say brothers taking not only one but sometimes multiple wives (see also Berreman 1960:777, 1975, Parmar 1975). Fraternal polyandry is also known from Tibetan areas north of Gau, and linked by scholars to keeping the land together rather than splitting it between brothers (for instance Goldstein 1978, Levine 1988). In Gau several families had several sets of brothers due to their fathers having had several wives, but fewer families were taking multiple wives, and some were now splitting groups of brothers by marrying separately. The village was also organised according to clans, which both low and high caste people had. These were sets of relatives, with up to ten households in one clan, and would work together on occasions such as cleaning out the house before the spring festival or harvesting extra dry fodder in early winter against cold rainy days (see Parry (1979) on the clan system in neighbouring Kangra).

As is usual in north India, Pahari villages would be patrilocal and exogamous, meaning that every daughter marries out and every daughter-in-law comes from another village.

Marriages would not be made with girls from the mother's village. The bride would live with her in-laws after marriage, often seeing her husband or husbands only rarely, due to them being out of the village for work (see chapter five and Wadley 2002). As Vatuk observed in north India in general (1982), the spousal relationship in Gau was considered threatening to the parent-son relationship, and so the daughter-in-law would avoid her husband socially in public. Every family member would have age seniority in relation to every other (as also with those outside of the family, so for instance an older woman might ask an unrelated young man to cut leafy branches for her, as if he were her son), and this would matter for term of address (with names only used for those younger than oneself, and kinship terms for those older) and for who would carry out tasks and errands on whose orders. In polyandrous marriages, this means that the younger brothers are always subordinate to their eldest brother, with whom they share a wife.

Remarriage was permitted in all castes in Gau, and even divorce, although this was not talked about openly. If a wife did not like a household (for instance because she was being beaten) she could return home to her parents and marry again, traditionally up to three times. Mobile phones, school and buses were used for communication between unmarried boys and girls, which would occasionally lead to love marriages. Usually, however, marriages would be arranged. Some love marriages would be celebrated with the usual festivities, temple blessing and feasting of both villages associated with arranged marriages. Some love marriages, however, in cases where the parents disapproved for instance, or when her marriage was arranged with someone she did not like, would happen as *baag ki shaadi*, literally running-away-marriage (i.e. elopement). This involved the girl simply moving to the boy's house. Someone would be sent to the girl's village to undertake post-marriage negotiation, and, if successful, there may be a smaller feast to celebrate the union. No priest would be involved in this form of marriage. The relationship between siblings and their mother's natal household would persist until the death of their maternal uncles.

So far I have spoken in general terms of how kinship worked in Gau at the time of my fieldwork. Because the main body of the thesis does not deal with kinship in any depth,

here is an example in order to illustrate the fluidity of Pahari marriage in villages like Gau. In early 2014, one of the hot topics in Gau was a marriage reshuffle that had just taken place in a neighbouring household. One of our neighbours was a friendly lady married to the eldest of three brothers. The young wife of the two younger brothers had refused to take the middle one into her bed. He was away a lot working in town, but would occasionally return to the village. She had two small sons and was happy with her youngest husband but did not want the middle brother. This situation was resolved by passing him on to the marriage of the eldest brother. In the new situation then, the rooms and fields which were his portion became part of the eldest brother's now joint household, to be worked by his wife.

The system of polyandry would keep the house together – as the brothers would have one set of children and their sons in turn would share a wife and their land. However, the practice of poygynandry meant that households and their land did occasionally get split up. One household in Gau had five and another seven daughters in the attempt to have a son. Without a son the household cannot continue, confided a young wife who had one young son whose health she worried about.

Gau – village and fieldsite

The village of Gau, then, while rural and perhaps tribal, is typically north Indian in some respects but peculiarly Pahari in others. Sharing polyandry with other, non-Hindu parts of the Himalayas, Gau remained an Indian village with government quota concerns and tied in to the monsoon system for rain-fed agriculture. This context portrays the bare bones of the social structure in Gau, which will underpin the ethnography to follow. In the next section I will describe the fieldwork and the relationship I had with people in Gau, which has shaped the kinds of knowledge this thesis explores.

Fig 8 Gau during monsoon

B. Fieldwork methods and ethics

I dreamt there was cyanide in the tea that the father in the household gave me and Mari (my sister). Reddish tea in white china cups with saucers. His second oldest son was there and disapproved of this. For social reasons I had to drink it anyway, and so I drank in very tiny sips. Two Americans had arrived in the village, I warned them to look out for the bitter almond taste and they were suitably shocked. The father's grin when I weakened (and turned red, though you were supposed to turn white again right before dying) was very like his mother's. I sipped the tea and spat it out without them seeing. Later in the dream, eating food, I wondered if I would have to watch it being made from then on, to be sure it was safe. There was a celebration (maybe Holi?) which we could see from the roof, and the father's niece was there (was she the one that told me about the poison?) (29/03/2014 - having left India on the 25/03/2014)

Towards the end of my time in Gau the walnuts were ripening on the trees. Though still green, one might pick them and eat the white nuts, having got rid of the bulky fruit around them. I was curious about the walnut juice from the fruit and its ability to stain

white skin brown, which I had read about in Kipling's Kim. So when opening the fruit to get at the nuts made my fingertips brown, I squeezed the rest of the fruit so as to cover my hands in it. Much though those around me objected, I made my hands dark brown, and the colour lasted for some weeks. With no mirror, and because we slept in our clothes, this meant that I woke up to brown hands, worked with brown hands, and did not see my own white skin except when bathing. It felt very comfortable, and in fact it took many months after returning to Edinburgh not to consider white skin to be abnormally and even unhealthily pale-looking.

This section on how I acquired the knowledge on which this thesis is based involves looking at how the chasm between myself and the people of Gau was bridged, however imperfectly, during fieldwork. The above dream and vignette serve to illustrate the degree to which fieldwork impinged on my life and sense of self. I will start by describing how I came to work in Sirmaur, before moving on to what I did while in the village and the ethics of fieldwork. Then I turn to how my position in Gau conditioned the knowledge I gained on return to Edinburgh through writing.

How this project came about

In the winter of 1984-85, hampered by the state of emergency after the assassination of Indira Gandhi which closed down the state of Punjab, my father took 21 suitcases of film equipment to a Tibetan monastery in Sirmaur, where my mother joined him to make the film 'A Tibetan New Year' that would go on to win the RAI Basil Wright film prize. I was born the following year. We went to visit the monastery in Sirmaur in 2001, and in 2009 I spent four months in southern Rajasthan working with a small NGO on the potential effects of climate change on agriculture and animal husbandry in the region. After a research masters at SOAS, I was lucky enough to get ESRC funding for this project at the University of Edinburgh, starting in September 2011. I became affiliated with the Delhi School of Economics, but it took me ten months to get an Indian research visa, and so I went first for intensive language training for two months over the summer of 2012 at the Landour Language School in Mussoorie, to augment and improve the Hindi I had from SOAS and to locate a village before finally,

in October 2012, commencing fieldwork.

Fieldwork

To learn about how people experienced and lived with weather in the village of Gau I lived there for ten months in 2012/13, returning for three weeks in February 2014. I slept in an upper room with the unmarried daughter (Anupriya) and son in the family, on quilts which we would stack away during the daytime. I paid monthly rent to the family, and ate with them until the last few months when a kitchen became free where I could cook my own food. We ate inside, sitting on plastic sacking on the floor, rice with beans and maize and wheat flour *roti*. Hindi being a tertiary language for both them and me meant reasonably smooth communication. Some things I did just once – interview an agricultural journalist in the industrial town nearby, observe a group of people from the Institute of Tribal Studies in Shimla assess the village as to whether it was tribal, accompany my field assistant's father to the doctor. Usually though, during the day I would go with women to get grass for their buffalo to eat, to harvest onion leaves for food, or to spread manure on the fields. Or I would go around the village chatting with people and conducting interviews. When there were fairs, weddings or shopping trips I would accompany the women.

Every two or three days I would go for fodder, either with one of the women in the households where I lived, or with another woman I was visiting or whom I had planned to go with. Because it was known that I would do this, women would come by the house where I might be writing notes on the veranda, drinking tea on the step or washing my clothes in the courtyard and I would be able to go up and grab my rope and sickle and join them. Every day, unless I was ill, I would go out and visit a few houses. For a few months, February-April, I had a fieldwork assistant on Sundays, Karishma, and we would go and do interviews together.

Going for fodder would be in the morning, at nine or so in the cold season, eight or so in the hot season, and whenever it was not raining during the monsoon. Sometimes we would go to the far hillside, an hour or more to walk, and longer back because the

weight slowed us all (I generally carried less than them). On other occasions we would go to cut weeds for the animals to eat in a field close to the village, only ten minutes' walk away. Generally grass would be cut from further away. If the woman or unmarried girl I was going with was cutting leafy branches I would stay below to gather them and make them into bunches for carrying. After returning from fodder gathering there would be time to visit people before lunch at about one. After lunch people would rest, particularly during the hot season, until three or four. Then it became possible to visit again, until dusk.

A visit usually comprised a combination of tea-drinking, informal questions and note-taking about the weather, relationships with the buffalo, upcoming ritual events, witchcraft or other topics and some work, for instance chopping vegetables if the woman was preparing food, detaching the chillies from the harvested chilli plants so that they might be dried, or my own knitting. Men, except the very elderly or low caste men doing tailor work or labouring, would not usually be around, although some men participated when I went with their female relatives to weed the maize fields during the monsoon or walked along the same paths to cut fodder, but never together with women. There was always something going on in the village, so the talk might be of the girl who got possessed during the end-of-fasting singing the day before, or people might be visiting that household to give ten rupees towards medical help for a small son in the house who had broken his leg, or the daughter-in-law might sit, feeding the fire and complaining to me that her mother-in-law did no work, and then later that same mother-in-law might come in and sit with me, listening to a story told by the neighbouring blind old lady. There were four or five weddings during the time I was in Gau: the largest of these took up days of feasting; the smallest was a runaway one, celebrated only with one feast, but much gossip. In November the talk was of when would the rain arrive, in January of the goat sacrifice and all the meat there would be to eat, in April of the growing heat and the erratic water available through the pipes as well as of the spring festivals when most people would go in their best clothes to the fair. I would go with the women in the hot season down to the stream to fetch water in a bucket carried on my head or to wash clothes. During the monsoon work was heavy, so there was less sitting outside and more working, and then resting inside when it

rained – I visited less then and did more work with people. When out on our way to a field or grassy pasture to cut fodder or do some work, the women I went with would point out whose land we were passing, comment on how it was being managed, note the medicinal or food use of a plant we walked past, ignore some scheduled caste women who were scavenging fodder on land not their own (later I might be going to their house to have a chat), ask whether a young girl walking with us was 'ready' yet (for marriage), or pass on some gossip, shouted to women on another path. In the evenings, after dark, when it was not appropriate to be moving around the village I would sit by the fire with the family or the neighbours and then go up to my room to take notes for the day on my computer. There would be a few hours between dusk and the evening meal. Because I took notes in a small notebook during the day, not always in full sentences, I have distinguished verbatim quotes by putting the Hindi translation in a footnote, whereas where I wrote down the gist of it I use quotation marks and for longer paraphrased accounts such as stories, I do not use quotation marks.

Sometimes I left the village with people, going to a plains town to buy clothes (twice), to the neighbouring village to visit their relatives (three or four times), with a bride as part of her entourage to her new home (once), to a spring fair (twice) and to make a short pilgrimage with the unmarried girls on the occasion of Shivratri at the end of August (once). Most of the time, though, I remained in the village. There never seemed enough time to learn and talk to everybody I knew there, much less branch out to other villages (although these were accessible through the universal village exogamy, meaning every married woman came from somewhere else).

Ethics and anonymity

While living in Gau, paying rent and contributing labour to the various households I spent time with, other, more unlikely things proved welcome contributions, for instance nail varnish, embroidery stitches, wedding photography, English classes and typing classes. The village name Gau is a pseudonym, meaning 'village' in Hindi, and all personal names have been changed. This is because although I have written about dimensions of life which I think that people in Gau do not mind me telling others about,

I am not confident that there would not be adverse consequences, for instance the legal status of polyandry in India is fairly ambiguous.

My position as a climate change scholar

This section is about my position and what this meant for data collection, and, by extension, the knowledge that this thesis presents. As touched upon in the discussion of Barad's term intra-action, it is usual for anthropologists to be inside the systems that they study, 'we use ourselves and our own personal experience as primary research tools' (Watson 1999:4), and this holds true for the study of climate change. The researcher, being inside the changing climate, is just as much inhabiting it as those s/he studies. Rabinow's statement that '[a]nthropology['s] object of study, humanity encountered as Other, is on the same epistemological level as it is' (1977:151), applies just as well here.

Knox studied climate scientists who observed themselves to be inside the climate system and contributing to climate change via the emissions from their actions such as taking planes to conferences (2015:96). Their acknowledgement of their own entanglement in their data made their position as privileged in a global system apparent, and rendered them political in rather a direct way (Knox 2015:97). Anthropologists are used to negotiating, if not neatly resolving, questions of entanglements, politics and morality arising from being inside the systems they study. Understanding how weather and society are mutually influential must form the foundation for understanding how the researcher, who is within and also represents society externally, can from that position learn about weather and by extension the kinds of effects that weather may have on society and on themselves as a person in society.

Crate (2008) argued that anthropologists must become climate activists on behalf of the people that they study. This thesis, however, aims primarily to shed light on the weathered texture of society, on intra-actions in the weather and on weathered actions and experiences, and therefore I do not follow Crate on this point. I also differ on the

grounds that my position is not to speak for people in Gau, and if it had been they would neither agree on what to say nor necessarily talk of the weather changes first. In going somewhere distant to do fieldwork my objective was rather to gain new eyes, and thus learn what I would have been slower to see at home. In this I follow Cruikshank (2005) whose careful accounting for the stories around the glaciers she worked with in the border area between Alaska, British Colombia and the Yukon Territory lays out the different strands of knowledge for the reader, allowing them to gradually gain a complex understanding of the lives of the glaciers.

My gendered position, and the process of incorporation into Gau

The way people in Gau understood and dealt with me shaped the knowledge I gained. This process happened through my integration into the village specifically as a fairly junior woman, although ambiguous because of my education and financial independence.

In the 1950s when Berreman did fieldwork in neighbouring Utterakhand, '[g]overnment forestry officers were warned to bring their own food, water, and bed rolls in this area, for the hospitality to strangers characteristic of plains people is lacking' (1960:781). And when Rao did research in Sirmaur district in the 1990s, he found that '[m]ost people in the area were not easily willing to be interviewed for they were not sure of the purpose of the exercise, motives of the people conducting it, and of course its use to their villages' (1997:76). The task of gathering data and doing research, in fact, is one that does not necessarily make sense to peasant agropastoralists. Guneratne used the term *nak chaina*, literally, lacking a nose, meaning 'shameless, brazen, or impervious to (or ignorant of) social norms' to describe anthropological research (2010:4). There is something brazen about entering a village and proposing to spend a year there, asking questions and observing what goes on.

The people of Gau knew that I was there to learn, and I repeatedly told them I was studying the weather (*mausam*) but when they repeated it back to me or told each other about me they would tend to say that I was learning about local traditions and old things. Their response to me often implied I was a plains Hindu, probably from Delhi. When I emphasised that I was foreign they wondered whether I was Nepali or perhaps from Pakistan. Once, Anupriya saw my proposal document on my kindle and asked me how it works, will I write all my notes down together and then it will be finished. Another time a woman asked if I was doing the research for a joke, would I be taking back the information about polygynandrous marriage systems (which I had been asking her about) and laughing about it back in my place. But mostly my material was uninteresting to my informants. They knew what their lives were like. They were far more interested in the question of how old people are cared for where I come from, and why my nose was not pierced.

I was in a difficult category to deal with, though from the city and allegedly educated, still I spoke simple Hindi, did not have a car or servants or entourage of any kind, did not wear saris, did not require my own room or even a chair, in the way that the nurse did. And of course I had no weight in local terms – no family in the area, no land, relatively few contacts, no inclination or perhaps ability to get jobs for people and few connections to the government and powerful people in the area. I was very much there on grace, and ten months is a long time for people to give grace. It is also a long time to remain a guest. Shryock wrote in his work on hospitality that '"The guest", Jordanians tell me, "is prisoner of the host." Visitors are treated well, but their mobility is limited ... they depend on their hosts for protection and respect' (2012:23).

I had heard that female anthropologists find they can take 'honorary male' roles in their fieldsite. Bell, however, stated that some anthropologists consider female fieldworkers to experience greater pressure to conform than male (1993:10), and this proved the case during my fieldwork. As will be seen in chapter one, the village had a very active mechanism for incorporating outsiders, so that everything about me was policed, even the way that I slept. This was helpful for immersion and learning local bodily habits, though it was a partial process. But it was complete enough that I became

mute in the presence of men, especially strangers, and otherwise comported myself appropriately enough that outsiders assumed me to be local.

A man doing research in the area observed that:

> [t]he women in these hill areas were usually busy working in the fields, fetching firewood, water etc., and were mostly not available to talk to us. Most of them were illiterate, shy, reticent and often without any option [sic] about issues relevant to us or any useful response to our question (Rao 1997:42).

In this sense then, my position was a privileged one of research access. I was accorded the avoidance relationship with men that married woman in the village had and was thus generally unable to talk with or even look at men, but I was in a position to gain contact with women that Rao lacked. In fact I did conduct a few interviews with men, for instance when my father visited early on in my fieldwork, and when I had Karishma help me with interviews, but most of my material is from interviews, conversations and work with women. I spent most time with older women and unmarried girls, but I did talk to young married women as well – these would tend to be busier.

I visited Edinburgh briefly in February 2013, a few months into my fieldwork, at which point I met with my second supervisor, Jamie Cross. 'Submit to the village' he suggested, when I talked about my difficulties in the field. 'I can do that' I said, 'I can submit to the village, but I cannot then also do my research.' As a woman in the village, going round doing interviews, taking notes, observing and asking questions, made no sense at all, and in fact was occasionally considered borderline immoral, for instance because it involved visiting many households. The family I lived with would have been happier had I not gone to different houses, but I felt that as an anthropologist I could not base my work on a single household and so had to stretch my moral credibility on that point. Like Allerton, 'I was advised privately *not* to accept invitations to eat with certain households, because of their "bad magic"' (2012:52 emphasis in original). The more I became immersed in village life in Gau, the more research itself became difficult. Cranney found that her 'journal entries became fewer and fewer as, in some

respects, I started living their lives instead of merely observing' (2001:36). In a similar way, as my fieldwork went on, the pull of local life took on its own logic, and I did fewer formal interviews, though I continued to write fieldnotes in the evenings.

Gardner and Carsten had similar experiences during their village fieldwork. Embarking, as anthropologists do, on fieldwork with the approach that they were the ones to be educated by the people they worked with (Whitehouse 2015:102), the Bangladeshi and Malay villagers Gardner and Carsten lived with were quick to incorporate them into the household and the village, like the Nuer, who, Evans-Pritchard wrote, would not allow him to live otherwise than how they lived (1940:15). Carsten, for instance, found that:

> absorption into a Malay family was part of an encounter that one might describe as over-determined. On my side, it was shaped by a wish to create relations of fieldwork on a more equal basis than those of the generation that had taught me (or how I imagined these), ... the Malay villagers ... were equally keen to integrate newcomers into their lives, and gave great importance to my conforming to local manners and customs for young women (2012).

Gardner describes a similar experience, remarking that

> [p]ossibly I tried too hard to conform and thus swept the research carpet from beneath my own feet, for how could a village daughter go around interviewing people and writing things down in her book? Towards the end of my stay I became increasingly paralysed in my formal research role (1999:54).

In trying to distance myself from the opinionated, 'I know best' colonial type position, I arrived somewhere where, like Gardner and Carsten, I gave the impression that I was free to be moulded. I became the child in many ways – inept, stumbling, but receptive to suggestion.

Of course, 'knowledge ... is a social phenomenon' (Hastrup 2004:456): it comes into

being *between* people. So the position I held in Gau (however awkwardly) as a member of a household, meant that I could become part of, or at least witness to, the circulation and practice of knowledge in Gau. As Mosse found, the relationship with informants is inseparable from the knowledge gained (2006:937). I was taught how to live appropriately with the weather: 'put on a jumper, it will get cold where you are going'; 'run the fan' (when it worked); 'sit by the fire'. When I was less biddable – sitting inside to write notes, for instance, because my computer was charging – the comments would become insistent: 'sit outside!' (informal address), sometimes with warnings about the dangers of the cold inside: 'you'll fall ill!' This was embodied knowledge, making clear what was and was not appropriate in relating to weather in Gau, which complemented the other material I gathered.

The later seasons were harder: life in the hot season was uncomfortable, and in the rainy season involved long hours of heavy work. The family I was staying with appeared tired of having me there, and Poonam Devi, the mother in the household, ended up contesting my right to water, but I could not move elsewhere without causing great public offense. On a more positive note I was made sense of also, when Anupriya, the girl I lived with, told me there had been a sister, who would have been my age if she had grown up, who died at six months old. She told me that this was why I was there: I was this sister. It is in the tensions between what I learnt to be in the village and what was important to who I was before that useful knowledge could be produced.

Writing up, the return

Having been incorporated into society, I did not find leaving to be a major issue. After all, villagers would also migrate or leave to marry and 'ethnographers are migrants too' (Grimshaw 1999:131). I returned for a few weeks in early 2014, and people who had got heartily tired of my presence seemed happy to see me for a briefer period of time. When I was leaving, Pankaj, the father in the household, said 'take one thing from our Indian culture' and I interrupted and said 'I'm taking lots of things, like the copper pot, and all my work, and–' and he said 'no, I mean take this thing, give your money to your husband to look after.' I had told him that the government gave me

money for my studies and he considered my financial independence to be problematic, perhaps threatening to the ideal order of things.

Back in Edinburgh, I embarked on the writing process: '[u]nderstanding is only part of the task, translating is the other' (Watson 1999:7). This translation is for the benefit of the reader of my thesis. In writing I understood what I learnt through the experience of fieldwork. After an autumn of attending conferences, I met with my supervisors in January 2014 and Laura Jeffery, my main supervisor, suggested I structure my thesis by season. After that the topics fell into place, with the work of going for fodder as a clear ethnographic focus.

Fig 9 The fields and pasturelands around Gau during the cold season

Chapter 1: Cold winter rain and the risk of illness

One day in the cold season, on my way to Gau from the bus stop, I was caught in a hailstorm. A schoolgirl and I took shelter in the upper veranda of an animal house near the road. Having waited out the heavy hail, we used the salwar kemeez *fabric I had bought in town to keep off the worst of the rain as we walked home. When we reached the house I lived in I invited her to sit by the fire and warm up. She refused, handing me the wet fabric, and ran off home in the cold rain. I could not understand this, she was obviously as cold as I was, and I knew there would be a fire burning. But the relationship between our households was of the worst, as I later discovered.*

This initial ethnographic chapter is about how people in the village of Gau use the weather to avoid talk and blame that could be destructive for social relations. According to local modes of explanation the cold would cause illness, and this had social implications. I will illustrate this using two examples. The first is the incorporation of myself into the weather sense of the village. The cold weather was a more harmonious explanation for my illness, compared with *food* causing it. Behind the proffering of the cold as a cause for the illness were ideas of culpability, in terms of potential witchcraft for instance, which linked both to my irresponsible and even immoral behaviour in visiting many households, and to doubts about the efficacy and genuineness of my hosts' and my own efforts to safeguard me from the cold. The second example is the incorporation of another new woman into the village, this time as a bride, when the rest of the village used the cold weather as a way of undermining the family into which she was marrying by not attending the wedding. I will use the example of this winter wedding to illustrate the interlocking experiences of illness, cold and social obligation in rural Pahari India. The wedding also demonstrates ambiguities felt in Gau around traditions of reciprocity at such lifecycle events when cash inequality in the village is significant. The cold was useful for speaking about things which were socially dangerous to tackle directly, as well as about care and

safeguarding the member of the household. Talk of the weather, in this case the cold, deflected the social dangers inherent in the alternatives. Weather talk, then, served as part of how people in Gau managed their relationships.

Famously, '[t]he weather is a safe topic of conversation because we can discuss it while avoiding sensitive or personal matters ... a casual topic to discuss with strangers' (Harley 2003:103-4 also, Golinski 2003). In this chapter I wish to argue that not only can weather be a device to avoid social awkwardness between strangers but can also be used for circumventing potentially flammable situations between those who are dangerously close. Affines are potentially a sensitive category when it comes to witchcraft (Geschiere 2013:124). When there had been open witchcraft accusations in Gau, I was told, the men of the accused woman's natal village would come in council to judge her, as her affines could not, being insufficiently impartial. The dangerous affine is a known category in the anthropology of South Asia. Bennett's classic *Dangerous Wives and Sacred Sisters* (1983) described how the in-marrying woman would be a threat to the patrilineal household unit. Therefore she must behave very well, especially for the first few years. However, though there were many well-behaved young wives in Gau, there were also those who complained to me about how much work they had to do compared to in their home villages, and then those who moved to town with their husbands and thus did not do village work. The tension around my behaviour was, I think, heightened by the fact that the only daughter-in-law in the household where I lived was one of those. She came to the village only once in the year that I was there, and on that occasion she cooked and ate separately from her in-laws – she did not even taste the food her mother-in-law had made and which the rest of us ate daily. So affinal relationships in Gau were as fraught as Bennett described. The examples I use in this chapter are of affine-type relationships, with myself as an outside woman and the February wedding family bringing in a bride for their eldest son.

To further my argument about the use of weather language in social interaction I will draw on Beck's work in Tanzania on illiterate women's use of the *kanga*, a multi-purpose patterned garment with a phrase or proverb written down the edge, which

described how women would wear these in instrumental ways. A woman, for instance, who had discovered that her friend had slept with her husband while she was away, paraded ostentatiously past the said friend's house with a *kanga* that bore the legend 'I thought [you were] my friend, but, lo! [you are] my co-wife.' (Beck 2005:138). There was no way of bringing this up between the friends afterwards, it was an unanswerable statement, because, being illiterate, she could claim not to know what was written. In a similar way, the cold winter rain in Gau was used by the villagers, and in particular the women, to make a statement about the lack of approval or support for the family bringing in a bride, through some peoples' non-attendance and a threatened boycott of the duties of the women associated with the wedding. But because of the acknowledged risk of illness cold weather brought, this excuse was one which could not be openly contested.

In the following section I start by showing how my bodily incorporation into life in Gau happened using the language of cold and the risk of illness. By using my own body and the initial confusions around the cause of my illness as an example I hope to bridge the divide between my reader and the people of Gau. In the second half of this chapter a wedding that happened in February 2013 when it rained for the full three days of the wedding illustrates how talk of cold would be used socially in Gau. The wedding also serves to bring the reader in via a celebration in Gau and to introduce some of the people who will continue to feature throughout the thesis. Finally I will conclude and bring the issue of cold and health risks back to climate change, in a pattern which every chapter will follow.

The cold and my ill body

Here I would like to show part of the awkward process I went through on entering Gau to reach functionality in local terms. This was a social process, but it was also a process of the body. The social and physical body, of course, co-exist in mutual constraint and delimitation (Douglas 1970). The safeguarding of my body in those first weeks tended to be spoken about by those around me with reference to the risky cold. My body was disciplined to understand and deal with the cold and social relations within and outside

the household correctly in the way that a child or unusually hopeless incoming daughter-in-law might be. Talk of the cold and the risk of illness in Gau was a kind of '"body talk", that is, the many ways in which the body is engaged in accounts about what it does' (Latour 2004:206). Or in this case, the accounts that it should have had, had I been properly Pahari in the way my socialised body understood and dealt with illness and cold. This 'body talk' offers insight into both a bodily sensation and a social norm relating to the risk that comes with the cold.

Winter in Gau lasts from late October until early April. During those months when I was there it would become cold at night, sometimes freezing, but then warm up again during the day with bright sunshine and clear blue skies. The winter rain would come four or five times in a winter, for two or three days at a time. This would be cold rain, unlike the monsoon rain. Being cold and wet was considered something to be avoided, and because most of life happened outside, the event of cold rain would permeate work life and social relations. The main recourse for people in Gau was to stay under shelter at times of cold rain. Travel might involve becoming caught out in the cold rain, and therefore it is something to be cautious about and even avoided. This chapter's opening vignette reflects this – in taking the bus when such weather was possible we had both been risking our health. In chapter four I go into more depth on hospitable relations between neighbours in terms of thermal regulation. For my purposes here it suffices to observe that cold winter rain was problematic for bodies in Gau (see Jerstad 2014 for more on the material side of illness risk in Gau).

When I arrived in Gau in November 2012 the skies were clear, but the first winter rain was very delayed, it only came at Pahari Diwali, a Hindu festival in mid-December which is supposed to occur after the rain when the planting and ploughing has been finished. Not unexpectedly, I was already ill when I arrived in the village and in fact spent most of the first few months in the field with diarrhoea, weakness and stomach pains. The old grandmother of the house told me that I was probably ill because of the cold. Pankaj, her son, took my pulse to learn whether I was ill from the cold or the heat. According to local ideas of health (as in the more official codified Ayurvedic system), being too hot or cold was a matter of health which did not necessarily

correspond with the weather outside. Foods were also classified under this system, and so might be prescribed to rebalance the internal temperature. Saklani described this in more depth for a Pahari area to the east, including the danger considered inherent in being exposed to cold air when overheated or drinking cold water when perspiring (1992:37). Poonam Devi, the grandmother's daughter-in-law, asked me in what part of my stomach the pain was, was it higher up or lower down, and on what side? They decided that the illness came from the cold, and would insist that I agree with this ascription. They commented whenever I washed myself or my clothes at any time that was not mid-afternoon 'but the water is cold, wait until later/tomorrow when the sunshine is warm.' Or if I drank cold water they would insist on mixing some hot with it, saying 'it is too cold now, you will get ill.' On my second day in the village oil was put in my hair, I was advised not to carry a bag, and not to wear a *dupatta*, that is the scarf that goes with a *salwar kemeez* in the cities, but a village headscarf instead (a square piece of cloth tied to cover the hair). The attribution of my illness to the cold was part of these wider advice-givings, gently letting me know in which ways I lived erroneously.

Members of the household where I stayed thus got involved in my illnesses, as did neighbours, passers-by, other guests and the village nurse. They had opinions and views on cold as the cause, and plenty of advice as to how I should be dealing with it. Remedies included allopathic pills, local herbs and animal products such as the goat gall bladder and dry tea leaves with sugar. At the time it was not clear to me, but it became apparent that this concern with the cold was more than it seemed. While talking about the cold, and being so very eager to attribute my illness to the cold, the people in the family where I lived and the friends and neighbours around them were coming together to ward off more negative attributions. I found their emphatic insistence on attribution to the cold confusing: could we not agree to disagree? I said that my stomach was not used to the food, it had not gained the habit yet. This explanation, linking my illness to food, was unfortunate, because of the link between feeding and witchcraft in the village, of which I was at that time unaware. Bloch wrote that sharing food could be seen as a test to overcome the fear of witchcraft (2005), and Harper noted the connections between feeding and witchcraft in Nepal (2014). My

being ill could reflect negatively on my host family, since I was eating with them. In the view of the village, the family I lived with had a certain moral responsibility towards me, and when I was ill the scope for speculation around them not having done the needful to advise and care for me (particularly as a young woman) increased. This speculation included the potential that they may have poisoned me. Their emphasis on the cold as cause, then, was part of the process of incorporation of me as a body and social being into the household and the village, teaching me to accept the reasoning of those senior to me. Illness and misfortune more broadly in the village could, I learned, originate either from the weather (heat or cold and particularly cold rain), or from malign intent, that is to say witchcraft, in the form of poisoning.

Poisoning in the village

Poison in Gau was about the intentionally directed witchcraft of the server, which would affect the guest eating. This idea of poisoning, in which the host or hostess may eat the same food but not be affected is found more widely in this region. Tashi, an old man in Ladakh, to the north of Gau, would not eat at others' houses because of his fear of being poisoned (Mills 2013). I was advised by Anupriya, the daughter in the household where I lived, to throw a small amount of food on the ground, or spill some of my water if I suspected it had been poisoned, as an offering to my deity, to neutralise the effects. Or to feed some of it to a child of the woman who was attempting to poison me, which would result in that child becoming poisoned. The enmity between households with past conflicts, for instance over land or water, would be couched to me in terms of the risk of poisoning.

Much later in the year Poonam Devi and I were going out to cut fodder from some trees which she had rented from a neighbouring household, paying them a litre pot of *ghi*, clarified butter. A rumour had been circulating that morning that a certain woman had been seen feeding another household's cow, thus allegedly poisoning her through witchcraft. We passed some men resting in the shade with cut bundles of leafy branches beside them, and she stopped, asking about this story, as it was one of them who was supposed to have seen it happening. He denied this, and Poonam Devi

commented that people would say anything, dismissing the story. She requisitioned one of the young men to come and help cut the leafy branches, as the trees were tall, and I remained below to gather them into bundles. She had taken the matter seriously enough to ask, though, verifying it with the person who had been said to be the source of the story. This story puts my habits of going with women to cut grass and leafy branches in a different light. When I went with a young wife to cut grass at her field and gave her the grass I had cut, she was very insistent that I go and eat with them that day, piling a plate high with food for me and watching me eat it. But I would generally refuse such generosity (of being fed), and this was known. I would explain this by saying that I should eat where I lived, since I was paying for food there. So the act of going and cutting grass or branches and not allowing for reciprocity may have made what I cut ambiguous for anyone who was concerned about that. The presence of murmurings about witchcraft in Gau is an intimation of the conflict under the surface between households in the village, which I will explore further in chapter four.

Talk around the cold and my illness relates then both to the issue of whether I was being well fed and cared for, and also to witchcraft through food in the household and through hospitality. The talk about cold, I later realised, had more to do with pushing these kinds of possibilities away than with what I saw as a matter of physical adaptation in a new place.

Though my understanding of my illnesses does not speak to the point I am making in this chapter, it may serve as a reminder that the researcher continues to be just as human as their interlocutors. During my time in Gau I became habituated to practices in which spit transmission avoidance was paramount, while contact of food and drink with flies, the floor and fingers did not have the same negative connotations. The series of illnesses in my early months in the field made sense to me as a process whereby my stomach bacteria shifted to align with the local faunal ecology of the gut. According to Gilbert et al, microbial and human cells coexist in the body not unconnected to culture, but in particular ways shaped in interaction with human lifestyles, habits and histories. The ecologies in the human body are open systems, they are not bounded, but are rather continuous with the outside world (2012:327), like the weather itself. I

was a feral organism there in Gau – following Tsing's use of the term to mean out of place, potentially destructive – because though my body was of the same species, my gut fauna belonged elsewhere. I had been brought there by industrially facilitated processes, such as airline flights, against a background of the quasi-expansionist view of the world, of mapping, understanding and thus incorporating, of those funding and teaching me. As such a wild thing I had to be tamed, domesticated into a being that would make sense in Gau. My body had to be locally taken over, incorporated not only socially, by means of the advice given to an unusually ignorant incoming woman, but also biologically, to be made one with that local gut ecology.

My protestation against bodily incorporation in the local medical system of cause and remedy, while being resigned to the process of bacterial incorporation, was a source of friction during that early cold season period. My body at that time could be seen as a contested site of hospitality and morality. It was in a situation sliding ambiguously between that of host and paying guest and of a household with an incorporating process underway. In fact I quite quickly became not a guest, but resisted becoming a junior member of the household. I would somewhat ineffectually attempt to keep outside of that process, not understanding that being there, being incorporated (literally becoming part of the body of) the household, was also a bodily process, distinct from my assumed renting relationship of autonomy, which had to do with feeding (as described in Carsten and Hugh-Jones 1995), and implied the riskiness of poisoning. The household in Gau did not permit this kind of autonomy. The autonomy I had assumed would come with renting is, I think, an autonomy of the waged and the urban. It did not fit there. The tussles over jurisdiction of my body then, resembled an unsatisfactory negotiation of common ground between aliens.

My sister's behaviour was approved of when she came to visit: she ate all the *ghi*, smiled, and then threw up in the night; 'you should be more like your sister', I was told. When I returned to the village in February 2013 after a brief trip to Edinburgh, Poonam Devi served my food onto the edged steel plate, and poised the clarified butter, *ghi*, to pour onto it. 'No *ghi*!' I said, a little tired and surprised that she had not got used to this. 'She doesn't eat *ghi*' said her youngest son, who also seemed surprised.

But she continued to threaten to pour it, until I laughed, taking her gesture as teasing, and she passed me the plate *ghi*-free. This felt like a gentle pushing for further incorporation into the household, only solvable through ambiguity-releasing humour, which perhaps acknowledged the ridiculous behaviour I was exhibiting and absolved her of the social duty to urge *ghi* on me.

Village wedding

I have described the issues around my incorporation into the village, and how blaming the cold for my illnesses deflected criticism of those around me in terms of witchcraft and adequate care. I move on now to talk about a wedding in which a bride entered the village and part of the village resisted this. The February wedding constituted the forming of an affinal relationship which would validate that household into the next generation, and the proposed boycott of the wedding by the women of the village was a sanction against that household. The problem with that household, according to the other villagers was that they were not considered to be making appropriate attempts to downplay their wealth in accordance with village norms (cf Berreman 1963:219, Moller 1993).

The marriage of an eldest son – or, in the case of joint marriage, of all the sons where the eldest stands in for the rest – was the event of a generation for each household in Gau. The eldest son, a teacher, in a prominent family in the village was to be married in February 2013. In November 2012, in the first week after I had arrived in the village, one man from every household went out to cut the wood for the wedding, ready to be stacked and dried by the time it would be needed to cook the food. These men were given a meal in recognition of their contribution, served to them by the unmarried eldest daughter in the household, Sonja. The *ghi*, clarified butter, which was poured over the meal, however, was going bad, and there were cutting remarks passed on this by some of the men. The next day, under cover of some other, smaller weddings happening at either end of the village, Sonja drank household bleach in an attempt to kill herself (see Mayer 2016 on female suicides in India). She was rushed off to hospital in Dehradun, a city in the plains, where her family spent a lot of money on

medical care. ‘It would have been better if she had succeeded’ said Anupriya, who I shared a room with. The two families were not on good terms. In fact, Sonja’s family was on bad terms with a whole swathe of the village. The gossip about her family revolved around their prosperity, with four sons studying or in urban jobs including one in the navy and one teacher, which they did not do enough to conceal, for instance having a fancy new extension to their house.

It took Sonja’s gut a long time to recover, but she was home again some weeks later, very drawn and able to consume only milk and the water in which beans had been boiled. She would sit in the cement (*pakka*) extension of their house which was walled off from the path, knitting in the sun, and neighbouring women would come and give ten rupees towards the medical costs. She glossed what had happened in talking to me of it as ‘an illness.’ Sonja returned to Gau from one of her check-up visits to the hospital in Dehradun just a few days before the wedding. She was still rather weak at that time, doing some mending when I visited but quickly becoming out of breath and handing it to a relative.

At the end of January, with the wedding due to start on the 4th of February, the people of Gau were preparing. They scrubbed the wooden interiors upstairs in their houses, re-plastered the courtyards with a mixture of manure and clay between the slates and plastered the walls with white clay. Some families also had their roofs re-done, a specialist task, the slates removed completely and then arranged once more in a dense interlocking pattern that would keep the rain out. Rogue goats belonging to the temple would walk on the roofs and disorder the slates, as would storms.

All this time the sun had been blazing down, the clear winter air warming from late morning until afternoon. But there was talk in the days leading up to the wedding regarding the possibility of the next winter rain, due soon, falling during the wedding. Anupriya told me about her eldest brother’s wedding, some time previously. His fiancée had been so worried it might rain she prayed this it should not rain that day. In the end it dawned clear for her wedding, and the whole field opposite Anupriya’s house was covered in extra stoves where women were making *roti*: that is how big the

wedding was, Anupriya told me. But for this wedding there was a sense of concern in Gau because it had been a while since the last rain, and the skies were cloudy. 'Rain might come' said an old, blind grandmother, who I would often sit with. 'If the weather stays clear [*saf*], then it is a good thing, we'll dance, sing. And if it rains then nothing. In the cold what to do? Lots of clouds, the weather will be bad.'

Just two days before the wedding and it looked like the married women of the village would not be attending. In the run-up to the wedding they held meetings and threatened to boycott the wedding by not attending and also not making the bread (*roti*) for it – traditionally their job. They would be provided with flour, but it was not a job that the men who cooked the rest of the meals in huge cauldrons could do. Sonja's family were said by the women to be proud and to have been insulting. This was a schism along which Poonam Devi's family, with whom I lived, were decidedly on the opposing side. Anupriya told me of a time when they were building their own new *pakka* house and her elder brother was working on the outside of it in quite a precarious situation and Sonja's mother had called up to tell him to take care that no materials fell down onto their house below, not caring that he might fall himself, said Anupriya. This kind of comment ('*gali*' i.e. insult) had given the women of the house, Sonja and in particular her mother, a reputation in the village for pride, that is for thinking they were better than others. But they were still tied in to the systems of giving ten rupees for medical costs and calling on the men for woodcutting and the women for roti making on the occasion of a wedding in the family. On the day of the last women's meeting on this topic I was asking how it had gone, a little concerned that I would not be able to attend the wedding. 'I am a *drinti*' I claimed, a daughter of the village, 'not a *roynti*', a woman who has married in, as it was the *roynti* who were meeting and who had the conflict with Sonja's family. This made Poonam Devi and the neighbour woman laugh, as in fact of course I was neither. The meeting had decided that the women would make the *roti* on the condition that the wedding family would pay 5000 rupees and a goat in compensation. This was agreed to, and in the end the money and goat were not asked for, it being explained to me that what was important was that they were willing to give it.

However, Sonja's new sister-in-law, a policewoman working in the plains but from a village close by, was not as fortunate as Anupriya's had been. The clouds rolled in, a thick mist descended and it rained heavily from the first until the third day of the wedding. And this cold, wet weather provided a space for the ambiguous non-attendance of guests, echoing with the resonance of the aborted boycott.

On that first day, the bride and groom in their separate villages were anointed with a turmeric mixture, which relatives would ritually paint on them. In the evening was the henna, which the groom and his friends sat and painted on each other. On the wall in that room, part of the *pakka* extension which would become the couple's room, was a handmade poster proclaiming the wedding, with the couple's names and the names of their siblings and close friends. The small girls sat in the corner with cheap henna in a pot which they were putting on with the help of toothpick-like bits of wood. Because of the rain the electricity was down, so this was done in the light of the photographer's camera. In the next room the women of the family, Sonja, her mother and sisters and aunts, were painting on their henna.

The village gathered the next morning in the veranda of the wedding family's *pakka* extension. Wrapped up in shawls against the rain, older women who were not coming to the bride's village watched the groom and urged each other to dance. Having finished their *laddoo*, *bhaji* and tea and thrown the polystyrene cups aside, the groom's party left the village in procession through the rain, with a man from the barber caste drumming, as was his task. The groom wore a bright headdress, heavily tinselled, with a garland made out of ten rupee notes. The many rented cars of the groom's party drove through the mist, music systems pumping.

The party danced its way through the rain down into the bride's village, slowly, letting off fireworks, and with the cameraman filming all the way. The bride's co-villagers stood in the rain expressionless, watching. An arch made of banana leaves had been set up at the entrance to the courtyard of the bride's house, with a red ribbon across it. The groom had to feed the bride's sister *laddoo* 'to sweeten the mouth' and pay 551 rupees to be permitted to cross this line. Someone had brought white foam in a canister

which they sprayed around the crowd when the negotiation over how much to give had been successfully concluded. The main ceremony took place under a *pakka* roof, with the local villagers packed in tightly all around. The girls from the groom's party stayed in a room upstairs under quilts, drying off and warming up from the rain. They and a few uncles played a song game involving thinking of a song that starts with the same letter the last one ended with. A girl of about eight who had come along was made to dance in the middle of the quilts to the singing. In a long photo session downstairs the photographer shot the bride against a black backdrop in all her bejewelled and heavily made up glory.

She wept appropriately on leaving the village, carried up the hill on a chair, with the groom trailing behind her. The party carried all the furniture she brought with her for the couple's room. The gold she was given by the groom's family was the brideprice, to be sold in the case of emergency, such as widowhood. I was told in the bride's village that 'where you are from, probably the girl's family gives, but here it is the boy's family which gives.' This reflected the usual assumption that I came from the plains of India, probably Delhi.

Having navigated the mountain roads in the dense fog back to the village, the party, swelled with guests from the bride's natal village, settled down to eat and then dance. The wedding house called the various sets of guests down to eat in turn, first the guests from outside, then the children, then the men and women of the village separately. This was usual, but this time the man doing the calling pointed out that the sky was clear (*saf*), that is it was not raining, and therefore that it was good to take the opportunity to eat now. Later he urged 'come on! It is cold, come and eat, hurry up quickly now.' Towards the end he was saying things like, 'we [the servers] are cold, please come and eat now.' The meal, though, was not as well attended as it could have been. Some people took their plates, had them filled and went back home to eat, huddling up against the cold and the wet. The mats which had been laid out for those eating were sodden; women squatted together on them in the break between rain, and the guests from outside the village sat in the warm wooden upper rooms of the wedding house. It was very cold and windy, the wind having, according to Anupriya, moved

the rain away. The young people braved it out to the half-built *pakka* house for the dancing, but the crowd was sparse. The family had hired a generator to provide power for the hired sound system. Anupriya and other girls put their phones to charge in the wedding house, as it was the only one with electricity at the time, from the generator. She seemed a bit sheepish about this in light of the conflict between the households.

That night the thunder was heavy, coming in short, loud bursts. Lightning too. The morning after, the 6th of February, my neighbour came to borrow a pen and told me the news. Three accidents had happened in the rain the day before. One was a lucky one, where the men had left the car while they did an errand, and by the time they returned, the car had slid off down the cliff at the side of the road and been smashed. All roads in the area of Gau went along the mountain, with hillside or cliff above and below. A cousin of someone in Gau had been in the second accident, but he was ok. The third was not so lucky, and the only brother of a woman in Gau had died in that accident. Poonam Devi went to condole with the woman that morning, and the neighbour's senior dad went to the woman's natal village. This sort of news was not unusual; some days before little Pihu, a neighbour, had come by and told me that four people from a few villages away fell down the mountain while going for grass and one girl died.

Late that morning Anupriya and the rest of the village young people trickled down to where the generator was running again, to dance. Anupriya's elder brother had gone to the neighbouring village to get more diesel for the generator. A younger sister of Sonja and the groom stood shivering in her wet jumper. 'Change to a dry one' I suggested, and she said 'then that one will get wet as well.' They danced the *rassi*, a local dance where each woman locks arms with the next in a chain around the drummer. The men do the same in a second, larger, faster-moving ring around behind them. After this the DJ put on Punjabi music, pop music from the plains, and Pahari music, pop versions of the kind of songs that village people would sing. Each involved a particular kind of dancing, the *bhangra*, active and fast-paced, and then the Pahari dancing, which is more sedate, with one leg stepping forwards and backwards and the arms lifted. Eventually the crowd followed the couple round the temples, going in

procession, with a few umbrellas heavily shared and most people getting wet and having to change their clothes afterwards. The bride paused on the muddy path to change her sparkly sandals for some ordinary flip-flops, *chappals*. Later that day it hailed. My neighbour told me that her senior father said that in the news they said it was going to snow, but that in the area of Gau it hails rather than snowing. According to him the hail was good for the young wheat, as it releases water slowly, whereas if it came later in the season it could crush the growing plants. It hailed so heavily that everything was white. The young unmarried people and children had a hailball fight from the rooftops, shrieking and giggling, shaping the balls of ice with their bare hands. My neighbour told me that she was already so cold in her feet that she 'didn't know where they were, [i.e. they were numb] and then it hailed!' Throughout the day there was a trickle of villagers going to give *daan*, a gift of ten rupees given at weddings, at the birth of a child or at the time of an operation (cf Raheja 1988) to the couple, who were in the crowded room upstairs with all the guests from outside the village.

That evening it was still raining and men went round the village, bringing the feast food to people's houses. It was distributed so that people did not have to venture out in the rain, but could still eat the wedding food. The wedding household was attempting to circumvent the situation in which people did not attend meals due to the cold. Inside the houses there was some of the typical quarrelling over quantity, where the recipients indicated they had enough, but those going round with the food tried to hand out more bread (*roti*) and ladle on more rice and vegetables. Being a wealthy family, despite having used so much on the medical costs associated with Sonja's recovery, they provided plenty of good food. This was the end of the wedding.

In contrast to the thick mist of the previous days, the bright sunshine the next morning lit up the mountainsides, allowing for clear views over to other villages, the forest, far pastures and the white temple on the hill. Women were doing chores such as washing clothes and bathing, which had not been possible during the rain. There was the sound of music coming from the wedding house, not the generator this time, but the women born in the village who had come out in force. Some of the women who grew up in

Gau had returned for this wedding. Two of Anupriya's older cousins came, one with a toddler and a baby, and the other with her two daughters. They were in the village for the wedding, but they did not attend it because of the cold rain, they said, staying inside a warm but cramped and smelly upstairs room all day, complaining of boredom. When I visited the baby was crying, hanging in a cradle from the roof and the toddler restless. Over the next few days more of these *drintis*, daughters of the village, came over, as the weather permitted. On that sunny morning after the wedding the *drintis* formed a line, going round the drummer and singing. As the morning progressed, more women and girls went down and joined. Even Anupriya's elder cousin, who had stayed inside for the previous three days, came down after washing and changing her clothes. When the new bride came out, in a simple *salwar kemeez* but with her heavy bridal jewellery and plait ornamentation, they urged and pushed her into leading the dance, as they had urged and pushed me when I first moved to the village a few months before. The older women sat on a large white mat being served tea and *laddoos*, round orange sweets, by the wedding household. The unmarried women of the village formed a separate dance, and the young men joined in, circling round the back of the girls in their line, as usual. Sonja was there, a little rested compared to the day before, and said, in her rather fatalistic way: '*Now* there is sunshine, when the wedding is over.' That day the electricity was coming back, in fits and starts. A few days later, the bride returned from her customary visit to her natal village and Gau was given one final wedding meal.

Though there were guests at the wedding, the cold rain had affected attendance noticeably. It was not possible to discern exactly how much of this was tacit disapproval of the unpopular household whose wedding it was. The blaming of the risky cold to explain non-attendance was ambiguous because it may or may not have concealed this disapproval. When women failed to attend the wedding, failed to go with the groom's party (Anupriya, for instance, did not attend, despite the bride's village being her mother's natal village), failed to go to the dancing, failed to turn up for food or even for the dancing in the sun the day after the wedding (as one of Anupriya's elder cousins did, with her daughter's illness as the excuse), they may have been pushing the disapproval that lay behind the sanctions suggested at the women's meeting. Any open question about these non-attendances or refusals would be

answered simply with reference to the cold, the cold rain, associated ill health and the risk of ill health.

The cold, of course, was something the people of Gau were really feeling. To go to the wedding despite the cold, to suffer through the cold rain and the feeling of being soaked in the cold was not nothing. People would get ill in the winter rain. During the February wedding it was cold, rainy and it hailed. The visiting toddler was ill with a fever and a sore throat. My neighbour was ill for the first few days and slept inside, not attending the wedding until the last day. Anupriya's little brother was ill with a cough. After the hail my neighbour also got a sore throat, which she attributed to the cold. Anupriya's older cousin's younger daughter was also ill. And these were just the illnesses in the row of three households where I lived.

So the risk of illness from the cold was borne out in the high incidence of illness during the cold rainy days. At the same time this was the wedding of a generation for the household concerned, and the rest of the village were subject to a weight of duty to respect that. The wedding was a process of incorporation of the policewoman bride, Sonja's new *bhabhi*. Being a waged professional, she was not like the other *royntis* in the village, but part of the urban aspirations of Sonja's family. After the wedding she was not in Gau for long enough for the water buffalo not to shy away from and kick or bite her when she was there, Sonja told me the following year. Sonja's family had an impressive *pakka* extension, all four sons working in non-agricultural professions, and also wanted to be able to call on the reciprocal networks in the village. They were not the only family in Gau to be shifting in this direction, (Poonam Devi also had four sons, none of whom worked the land), and there was uneasiness around this. There were things that could be done to mitigate the public effect, in terms of maintaining harmonious relationships within the village. However, Sonja's mother had become unpopular, through not sufficiently following the village strictures of politeness which supported the fictions of equality between Rajput households. So the women met to discuss the consequences in a situation where Sonja's household was relying on the cooperation and goodwill of the rest of the village. The cold and the potential for

illnesses arising from the cold were used to manage a conflict in the village, like Beck's *kangas* were used in Tanzania, without erupting into open confrontation.

The other process of incorporation this chapter has dealt with is that of my own body into the village. Without a local role to fit into like that of Sonja's *bhabhi*, the tensions around my bodily incorporation taught me about the position of the person in the household and the risk of the cold for the body in Gau. The body was to be safeguarded, with the risky cold and in particular the soaking from cold rain to be avoided. The person must have the chance to get on with necessary work, including attending important events such as village weddings. There is a duty to the household to remain healthy in order to be able to work. The strength of this reasoning locally is what underpinned the cold as a weighty counterargument to alternative reasons for my falling ill, and also as a strong excuse with regard to non-attendance of the winter wedding. The cold was not just used as a polite fiction to paper over cracks of social conflict. Rather, it had a significance and a risk to it which was felt and dealt with in a continuous and consistent manner. And it was this salience which made it such a powerful social tool in these two cases.

The risk of illness and climate change

In this chapter I have shown how weather talk in Gau was used as a tool of harmoniousness which would deflect possible witchcraft suspicions and jealousy-related conflict. The weather, external to social relations, removed the blame from Anupriya, Poonam Devi and the other members of the family in whose house I lived with regard to my illnesses, and also from the villagers in general who did not attend Sonja's brother's wedding. The people of Gau took collective action and practiced social regulation with regards to the wedding family and myself, with reference to the risk of illness from the cold. The body in Gau was in winter oriented towards the

alleviation of the cold. This chapter has started to establish the place of the person in the weather in Gau, with a focus on health.

Weather risks are frequently health risks, both for humans and animals (more on safeguarding the animals in chapter three). Baer and Singer (2009) charted some of the health implications of the changing climate, including heat stress, respiratory diseases and the spread of waterborne and vector-borne infections. These are a product of changes in weather and changes in lifestyle together. So when increased heat is offset by the increased use of electric fans, this may not lead to increased morbidity for instance. In the case of the cold winter rain in Gau, although late and erratic, it was a time when people would not go out of the house to work, and as has been seen, even to attend an important village wedding. When the younger sister of the groom preferred to wear a soaked jumper rather than changing to a dry one, she was acknowledging that in the slow procession following the couple round the village to the temple, she was likely to become soaked again. The occasion of her brother's wedding was not one where she could opt to stay warm and dry by the fire. So the motivation to safeguard the body from the risky cold may be at odds with what is required socially. This chapter has mainly been concerned with another social use of the illness-risking cold, however. When many people in Gau did not, as the younger sister of the groom did, brave the cold rain to attend the wedding, this was coloured with the threat of the women to boycott the wedding entirely. The ways in which morally policed social relationships interweave with weather experiences and actions has consequences for adaptation (see Douglas 1992). That is to say that the social concerns around dealing with the cold rain in Gau mattered for whether people became ill. In the context of this thesis the changing disease and health risk landscape which climate change brings are part of the world in which these various practices around illness, such as the strongly enforced interpretation of my illnesses (and therefore the correct kinds of remedy), continue to take place.

Chapter 2: Village work and the warmed body: fetching fodder outside

I was down by the stream when the pipes had run dry, fetching water. A young girl came down after me with an empty water bottle to fill and carry back up to the village with her. She carefully filled the bottle, put the lid on it and nestled it between some rocks nearby. Then she took some time to play in the water downstream. After a while playing, she returned to pick up the bottle, and walked steadily up the steep, dusty hill.

The previous chapter established that winter cold, which carries the risk of illness, is a problem in Gau. Illness incapacitates a person for work, rendering them unable to fulfil their commitments to the household which sustains them. In talk about the vulnerable body, social relationships and duties are referenced, established and safeguarded. In this chapter I will look at how work itself is a solution to the cold in Gau. While wage earnings in town would pay for chilly cement houses and synthetic sweaters, the practice of work in the village heated the body in the cold winter. Moving outside, women, children and some men would work, contributing to the household economy and warming themselves. This is in contrast to the urban or postindustrial solution to the cold where every body must remain inside a box (room) which is heated, in order to be heated itself.

In this chapter I also want to convey what village life is like, using the repetitive practice of going to fetch fodder to stand in for the many tasks that make up village life (building and feeding the cooking fire, wresting the dry cobs of maize against each other to loosen the seeds ready for grinding to flour, pulling the ends of rope back and forth to swish the wooden paddle that churns the milk). I would like to show the kinds of things that people spend their entire day doing outside (between tea breaks) in Gau. The stuff of work was the stuff of food, and thereby the stuff of continuing life. Work is a non-trivial and pervasive activity in Gau. It is both a way of life, bound up with belonging to a household and also a solution to the problem of the cold.

Establishing that the cold is a problem in Gau, I will start this chapter by describing some of the work that would be done there. The issue of illness as seen in chapter one is connected to work; the cold is a problem because it incapacitates for work by making people ill. This work was core to membership of the household in Gau. I will then go into more depth on going for fodder. This was a task that was undertaken daily in Gau, and necessary for sustaining the bovines and goats (see chapter three). After this I will look at the household as the context for work, as an important social unit. Bringing the discussion back to the problem of cold, the penultimate section describes how the act of working itself heated the moving body, providing a solution to the cold in the core argument of this chapter. Finally I conclude the chapter by looking at heating the body in relation to energy use and climate change.

The cold is a problem

A passenger sitting in the front seat of a shared vehicle making its way up the zigzag roads towards Gau in February 2014 questioned the driver about his non-requirement of payment from an old man who had just got off, saying 'Was he your father-in-law?' i.e. is he deserving of such respect and exceptional treatment? 'It is cold,' the driver replied, referring to the winter wind which must have rendered the old man's journey uncomfortable, sitting as he had been in the open back of the car.

Back in the village, work would go on, even in the cold. One girl told me she would never go out to work if it looks like rain. Another girl said that well, she had to go, because who else would go? On winter mornings women would leave relatively late, at eight or so, when the sun had started to warm the mountainside. They would go to sunny, grassy hillsides which were not exposed to the chill wind. The exposed, windy spaces were appreciated in the hot season, when fodder gatherers would go out much earlier before it became too hot.

Sometimes, though, exposed windy places would be sites of work even in the cold. I went with Kali, an unmarried girl, up the hill to cut the young wheat, which had such poor growth that her family were giving up on that field and harvesting it for fodder

instead. She wore several layers of jumpers and a thin windbreaker on top. We met an old woman on the steep path, and sat with her. She asked me whether I had any children, told me that the best time for having children was 17-20 years old, and speculated on whether possibly I was barren. The field Kali and I were headed for was on the top of the hill. I had been there a few times to graze the oxen with her, and feed the buffalo with old dried maize stalks from the monsoon harvest. It was a rather flat field, exposed to the cold wind. We got to work cutting the longer and shorter stalks of young wheat, along with whatever weeds had grown up alongside them. She would pull the sickle in a sharp jab, cutting through the stalks held in her left hand in one slice. Then she piled them up nearby, going around afterwards to take a few long stalks to twist around them and hold them together in sheaves. Though we had to squat down, rather than standing comfortably as on most pasture hillsides, it was satisfying work, cutting the unevenly growing young wheat in the rows it had been ploughed into. Kali had been up since very early that day; her family worked her rather hard. As we worked she told me that she was worried that she might marry somebody who would beat her. How could she avoid that, she asked. I suggested observing how the prospective husband behaved around animals, which I felt was a weak response. Carrying the green wheat down the very steep path, the gravel was a stumbling risk, but Kali stepped confidently through her tiredness. Her brother was at school and her sister studying computing. With a priest father who rarely did farm work, much of the labour was left to Kali and her mother.

For people who work outside, the cold will envelop them. This is in sharp distinction to those who spend their days inside, though inside spaces may also be cold. In this chapter I will pursue the several dimensions of this issue: why people work (which will be continued in the next chapter on keeping domestic animals), and how, given the necessity to work, they stay warm outside.

Why it is important to be healthy

The problem of the cold is a problem for the household in Gau because when people

are incapacitated by illness, they are unable to undertake their work, which must be done by someone, or there would not be food to eat, as women would remark to me. The duty felt by the people I worked with towards their households made daily work an unavoidable part of life in Gau.

Fig 10 Poonam Devi and Priyanka Devi carrying manure. Pihu and myself going for fodder (Photo: Juliette Oxford)

Visitors to Gau meet a village in continuous activity. Young men visiting from town – the god-brother of our neighbour for instance, or the brother of Poonam Devi's daughter-in-law – would hang around at a loose end, watching people work. 'In the city they rest.' I was told, 'Here we work for/with our food.'[3] The skills of livelihood in the village consist of ways to deal with an environment from which food does not simply spring. The Hindi term *kam* 'work' would be widely used in Gau to refer to

3 *'sheher me admi aram ko. Yaha roti me kam karte hai.'*

agropastoral work, more so than the Pahari equivalent *ṭhoḷ*. The derived *kam ka* literally 'of work' means good, nice, useful, serviceable. This was used by Paharis as a term of accolade, about new clothing for instance. *Naukri*, on the other hand meant waged labour, a job. The word for work in Pahari was *ṭhoḷ* perhaps 'toil' which is connected to the Sanskrit word *ṭahall* (walk up and down) and has a parallel in Hindi *ṭahalnā* (to work).[4] Work itself, then, was connected to movement, walking. Life in Gau happened outside. People spent their time walking from field to stream and moving substances around, water for the animals to drink, fodder for them to eat. The animals would process the water and fodder to milk in the case of the buffalo and to meat in the case of the goat. Left over would be the twigs from the leafy branches, stacked and kept for firewood. People would sit outside working, washing clothes, twisting rope, spreading beans to dry. There would be a constant flow of people walking along the main path through the village. Most of them would be carrying something: if not a bundle of grass then the rope and sickle to gather one; if not clean wet clothes then dirty ones; if not a sack of rice from the ration shop then a box of matches. In their life outside the weather matters, in its physical immediacy. The necessity of the assembled actions that make up the work for life would not be questioned. If the work is not done sooner, it must be done later; if not today then twice as much tomorrow. When I first met the village nurse she was treating the foot of a man of the barber caste, which had a nasty gash in it. She told him not to get manure on it and he said 'how can I not get manure on it?' expressing the inevitability of work.

Boserup's work (1970) was groundbreaking in looking at the way women's labour contributed to the household and how shifts to urban and waged situations did not always lead to more autonomy for women. Gooch (2014) found this to be very much the case in Pahari Utterakhand. In Gau, somewhere between the educated, urbanised and the remote examples Gooch used, women had a lot of mobility compared to parts of the Gangetic plain, and there were also opportunities for urban jobs (see chapter five). In the Euro-American literature on women's unpaid household labour (for instance Boydston 1990), the emergence of waged labour happened alongside domestic work as a defined and unpaid category. Rather than viewing women's work

4 See: http://dsalsrv02.uchicago.edu/cgi-bin/philologic/getobject.pl?c.1:1:1574.soas

as exploitation (in Gau, senior and junior members of the household worked very hard), I am interested in how the work itself is simultaneously a way of life, part of belonging to a household, and a solution to the problem of the risky cold.

Work in Gau is not optional. Campbell describes how a teenage boy in Nepal whose father had remarried 'was told he was welcome to choose to stay with his stepmother and half-siblings as long as he worked hard: "do work and eat." He had to earn his keep in other words' (2005:86). Zoller, a linguist who works on Pahari languages, asked me to collect a version of the story of the prodigal son, which is useful for linguists. In the story a man has two sons, one of whom stays and works with him and the other goes off, wastes his inheritance and is reduced to keeping pigs, but then when he returns is welcomed warmly by his father. When I told this story to some old ladies in order that they might tell it to me in Pahari there was not much sympathy for the boy in the story. If you do not do your duties, then that is that, it seemed. Karishma was angry with her brother one day, saying to me: 'if he doesn't work, how can he expect to eat?' This logic meshes with how Pankaj, the father in the family where I stayed, would joke about how I should be given food when I had gone to collect fodder, and also with how people would invite me for a meal after I went to cut grass with them. One day Anupriya was out cutting fodder in the tree by the field and I was collecting the leafy branches which fell into piles ready for carrying. From up in the tree she told me how she had joked on the phone with a boy, saying she doesn't know how to work, and the boy quoted a common saying: a girl went to be married, saying 'I don't know how to work,' and they said, 'well we have others in the house who can do the job of eating, we don't need you to do that job.' Work in the village, then, played a major role in peoples' lives and concerns. Work, as the boy had pointed out, was closely associated with providing food for oneself and one's family.

Much of the work that women and some men in Gau would do related to the keeping of the animals and in particular the dairy buffalo (see chapter three). Poonam Devi explained this focus to me, saying there are few jobs for women, so dairy is a good option. Non-farm work that women in the village did included nursery worker, health worker, school cook, informal tailor for instance of children's clothing and computer

centre tutor. Some women left the village for work. Priyanka, a scheduled caste woman who used to work for Poonam Devi's family, carrying manure and fetching fodder for 50 rs/day, went to work for higher pay in an air-conditioned and heated pharmaceutical factory, leaving her young children with her mother-in-law. Those who stayed in the village, however, remained active throughout the day with their work. Kali told me how she thought she would feel 'bored' – she used the English word – if she didn't have this work to do, i.e. going for fodder. This was repeated by women when it had been raining and they had been stuck inside, and also by a girl who had been to visit her sister, a teacher, in town for a few weeks, saying that down there after sweeping the floor in the morning there was nothing left to do. One beneficial effect of the doing of work, then, was the alleviation of boredom.

City people would talk about life in the village as being boring. They, however, were not called on to work when they were there. So, as that was what was occupying everyone else they found the forced inactivity irksome. Certain people within the village were considered 'unable' to do work. When Karishma invited me to go and plant onion seedlings with her, I invited her (town-educated) junior father to come (her senior father worked very hard gathering fodder and in the fields). 'I don't know how' he said, sitting on the grey plastic chair on the courtyard. Afterwards I worked out that this was perhaps construed as an insult by him. When I came back in February 2014 and met him in town on my way up to the village he reiterated this position, remarking that probably I would have forgotten how to work in the months I had spent away. Girls coming back from studying elsewhere – doing the last year or two of school in town maybe – would sometimes claim they did not know how to work, or that they had forgotten how to. In Dehradun the woman who ran the guesthouse I was at looked down on work, even light work such as cooking, claiming that it weakens the intellect. It is this sort of approach to work which Pahari agropastoralists I spoke to would ascribe to city people. The valuing of practical work thus marked urban people and rural people as different.

Work in Gau was a reason to stay healthy and safe from the cold. It was part of life for people in Gau, and part of being a member of a household and partaking in the right

to eat as a reflection of the duty to work. Having looked at what work means in Gau, I turn to a concrete instance of menial activity which would take up much of life in Gau.

Going for fodder

In this section, I describe the work of going for fodder, which is one of the major tasks undertaken by the able-bodied in Gau. It is a form of farm work which is carried out all year round (the buffalo must eat in every season). It is carried out outside, and it is in doing this kind of work that the people of Gau are exposed to the cold, the heat and the rain. Everything about going for fodder, from the sharpening of the sickle, to the feeding of the buffalo, would take place under the sky and in the temperature and the weather that the mountainside was subject to at that moment.

The day for an agropastoralist in Gau involved much hauling and processing. Heavy bundles of green leaves and dry grass would be shifted for the consumption of the cud-chewers, which they process into further materials of white milk, red meat and black manure. Pahari people – men as well as women – would go out first thing in the morning and again later in the day to harvest and carry fodder.

Getting up fully dressed, after a bite to eat and a cup of tea, unmarried Anupriya would sharpen her sickle on the round sharpening stone, pouring water over the blade to rinse off the blackness of sharpening. Then she would leave, rope in hand, mobile phone secreted about her person, headphones in. Other women would be walking along the same paths, going together along the steep mountainside and then peeling off as they reached their family pastureland or tree lined fields. Low caste families with little or no land would scavenge from the land of others. Others mostly turned a blind eye (though occasionally the owner of the land would shout at them).

Fig 11 Woman carrying water to the baas

While going for fodder, she would be oriented on the vertical axis, as most paths around Gau have a steep drop to one side. On her way she would keep an eye out for the fields, her own in particular but also neighbours', marking here poor growth of wheat (cold season), there the track where a leopard dragged a buffalo calf across a field, or perhaps greeting someone spreading manure (during monsoon) or off gathering fodder on another path. This greeting would be shouted, as would any questions, teasing or news. Some way below the path would be forest, river, scree and wild places – *jangel*. Fodder trees line the terraced fields and family grasslands are on the shoulder of the hill, below the fields and the small white temple on the hill.

Fig 12 Poonam Devi cutting leafy branches for me to gather below

Having reached the designated spot, bunching the grass in one hand, slicing with the sickle in the other, Anupriya would pile up dense bundles of grass. Or, climbing up a tree, balancing on unlikely-looking branches, she would hack off long leafy batons, to be gathered where they fell below. Then she would make her way home, slowly, with the bundles of leafy twigs bound up and tied together with her rope and balanced on her head. She might meet someone on the path and rest under the shade of a tree where three paths meet, or laughingly refuse an offer of tea at a house she walked past. The carrying of the fodder, often a huge pile stacked up high, was not the least part of this work. This walking was a practiced activity, under the heavy load. She might fold some of the grass over the rope to make a softer transition of the weight on to the top of her head, or fold her jumper in the increasing heat of the morning to place it there, between her head and the fodder she carried. Once home, she would walk past the kitchen and living area, heading for the animal house where she would dump her bundle on the ground, out of reach of the interested buffalo. Untying the rope, if it was

feeding time, she would unbundle some of the leafy twigs and hand them in to the calf or put them in front of the buffalo. When the leaves had been stripped from the twigs by the munching buffalo, these would be bundled and put to dry for next season firewood.

Going for fodder is a job that requires grassland or leafy trees and also two tools: the rope and the sickle. Rope would be made from old plastic sacking, or from soaking twigs in water for weeks and twisting the resulting fibres together. The sickle came from the blacksmith, who would come to the village once a year or so. An old blind lady whom I would often sit with in the sunshine, on plastic sacking outside her house, would sometimes tell me stories. Various grandchildren might be sitting nearby, and daughters-in-law might pause between tasks to sit with us and drink tea. A woman had a child, said the old lady, but it wasn't a woman like you and me, it was one who would eat anything, like people and children. Anyway, this eater sent her girl out to cut grass. 'Go and cut grass!' she said. The girl walked up the hill to the pasture ground and threw herself down and started to cry. 'Why are you crying?' god (*bhaghvan*) asked her. 'I have been sent to cut grass but how can I cut grass with no sickle?' she replied. But soon many mice arrived to help, they bit the stalks of the grass for her and soon they had cut enough grass. Then she started crying again 'How can I take the grass home without a rope?' So along came a snake and said to her, 'use me to tie up the bundle, but don't drop me, put me down gently when you arrive.' So the snake wrapped around the grass and she was able to lift it onto her head and carry it home. When she got there, she put it carefully on the ground. The eater came out and said 'where is the grass?' The girl pointed to where she had put the bundle. And when the eater went over to hastily undo the rope on the grass, the snake bit her and she died. In her house there was a room with lots of bits of people, like arms and legs and heads. So it was good that she was killed, said the old lady who told me the story.

Going for fodder happens in the context of the household. In this story the category confusion of eating people is linked to the lack of proper responsible behaviour from the senior woman in sending out a junior household member without providing her with the necessary equipment. It is the household that owns the animals, and the

household that organises the processing and sale of the dairy goods. The next section brings together the household as employer, sustainer and provider.

The household as the context for work

The household is contained by the house, it structures the organisation of working people. 'If the language of the house is "about" kinship, it is no less "about" economy and just as much about joint subsistence, production and consumption as it is about property' (Carsten and Hugh-Jones 1995:19). Against the background of, for instance, Chayanov et al's (1966) work on the balance of work, benefits and resources in the Russian peasant household, anthropologists have asked how households have changed in the transition from a peasant to a post-industrial economy (Wilk 1991:10). As Sahlins put it '[t]he household is to the tribal economy as the ... corporation to modern capitalism: each is the dominant production-institution of its time' (1972:76). Of course, Gau is both a peasant, subsistence-based village, and also has elements of post-industrial in its economy. Pahl was a British sociologist whose work on the Isle of Sheppey in the late 1970s and early 1980s focused on the household as a unit of analysis. Work, he wrote, 'was done by members of *households* for the collective well-being of household members' (Pahl 1984:19-20 emphasis in original). This focus was not one meant to smooth over conflict within households, nor to make any analytical statement (for instance about who makes decisions) except about the grouping of the work and sustenance unit. Households, he wrote (1984:30), might also draw on labour from outside, and might well combine waged labour with other forms, in composite strategies. The household, the basic unit as referred to by the people of Gau themselves, structured working life in Gau, but involved members coming and going, contributing in different ways. As Fricke wrote in *Himalayan Households*, 'work is for the common good of those who share the hearth' (1994:130).

The village of Gau was organised into houses, some of which housed multiple households. The household was an economic unit, members of a household ate together, and their labour contributed to the management of their land, sustenance of their animals, and the other work that would go into life. Sometimes sons married

separately and formed different economic units; others stayed as a single unit. This would generally align with the wife. So if there was a separate wife, the economy and household was also separate, unless the wives were senior and junior within the same marriage, but this, though common in the elderly generation, was only the case in a couple of households in Gau at the time of my fieldwork. Distinguishing between a household which is a single economic unit that has several wives married to the different sons and one where there is a polygynandrous marriage can be difficult. Overall, though, the person is part of a household, and this is how people are located in the village.

Households in Gau would manage the labour inherent in and thus available to them. Some of this was through (often male) waged labour elsewhere, in town, or locally (see chapter five). Occasionally labour would be managed by the larger patrilineal clan group. Women would go in groups to cut dry grass together in early winter (November) to stock up for rainy days. They would scrub the wooden upstairs together before the spring festival of Vishu. At weddings one man from every household would cut wood and one woman make roti. Within the household, senior, responsible adults would decide which tree to cut leafy branches from, when to move the buffalo to be close to the fields in the monsoon, and might be the ones to wake junior members of the household and instruct them on their tasks for the day. Neither junior members of a family nor responsible senior ones would be in charge of their own time. When the girls had to go and carry manure, they had to go and carry manure.

As seen in the opening vignette to this chapter, the work did not happen without pauses and was interspersed with amusements. For instance the work of grazing the oxen would be a patient but not unpleasant job. The Hindi term *dekh-rekh* is about looking after, but with strong connotations of 'watching' – *dekhna* means to watch. This is applied to children, oxen and goats. The work meant keeping an eye, but not carrying heavy loads. When I went with Kali, a cheerful girl who was always busy, to graze their three oxen, we would sit and watch them and then get up to follow when they moved. They would snatch a bite of grass or leaves and then move on, not always staying together, and sometimes straying into neighbours' fields. To herd them she

would chase them, tap them sharply with a stick, or throw small stones to hit the part of their body in the direction they were supposed to move away from. One day I met Anupriya's grandmother carrying fodder for the oxen. I was surprised, as oxen are usually grazed, and I had met her out grazing them before. She explained that she cannot 'flee' (run) after them (as she would have to when grazing them), or finds it too tiring, and so brings the food to them instead. Grazing was a job done by children (especially before school became so prevalent), the weak and the elderly. It is erratic, following the pace of the animals. Children would play with stones and mud while herding goats, and others walk for hours, having lost the oxen in the forest. Lacking extra labour, Karishma's family left their oxen to graze freely, checking on them once or twice a day; but one of them fell off the mountain and died when they were being left like that. It was not an optimal solution.

Grazing the oxen is work as part of life, work which makes up the place of the person in their household, and also which sustains and maintains that household. If work is what keeps the household together, it is also the stuff of their relationships and their actions and activities. In my third story of going for fodder in this chapter (from the monsoon season) I hope to show how this work, exposing to the elements and non-optional as it is, can be a not unpleasant task and is and continues to be pervasive to life.

Fig 13 Karishma and me carrying green grass (Photo: Georgiana Keable)

Karishma and I went to gather fodder during the monsoon mist. As we walked along the narrow path that skirted the mountainside, with just a few tufts of grass separating us from the steep drop of several hundred metres, she noted the pleasant swishing of the damp grass against our ankles. Sickle in hand, she paused to greet a young girl with a small bundle of fodder on her head as we walked past. We walked above the forest and past the small stream, pausing for a drink, and on around as the mountain curved round. We could hear other people moving through the mist, and occasionally caught glimpses of them near the path: a woman bending over in an egg-yellow *salwar kemeez*; two girls in green and blue tying up their bundles of green grass, ready to lift onto their heads. Karishma told me about how a grandmother (the same one who told the story of the cannibal who sent her daughter to cut grass) had been prescribed by the doctor to walk in a field of green grass in the morning, when it was wet with dew,

and the only field of green grass was the neighbour's wheat field at that time of year, so she would go there early in the morning to walk there. At some point the neighbour noticed and got quite annoyed about it. We walked uphill for a while until we reached the designated spot for cutting that day. There were no fences, but the people of Gau would tell from a stone or a particular tree, where the boundary of the pastureland lay. When we arrived her father was there, cutting fodder a little way up from us. We greeted him and started cutting, standing in one place and then cutting the grass in front of us, as the hillside was very steep. He was rather concerned that I might fall down the mountain, but Karishma laughed, knowing that my balance was adequate. Cutting the grass, one had to avoid the prickly plants which the buffalo would not enjoy eating. Cutting the leafy branches of sprouting trees at ground level was good, and though what we were cutting was 'grass' (*ghas*) it was actually a mix of different plants and different kinds of grass, which we would bundle together. Now and again there might be a rich clump of broad, green grass, and the feel of cutting it was luxurious, like a rich vein. The hillside was patterned in a crisscross diamond shape of paths, meaning there was always somewhere to stand as one cut the grass. We worked our way along the hill, Karishma above me and working faster, piling up the sheaves of grass. The work was not heavy, and Karishma had patience with my slowness, having come back from staying in town to study only a few years before. When I had put together four or five bundles of grass, and she seven or eight (the wet grass was heavy), we laid out our ropes and piled up the bundles so that the rope would hold them securely. Leaning forward, hooking the pile with her sickle, she hoisted it up onto her head, so that the weight was well balanced. We walked slowly back along the narrow path, heads moving sideways to answer called greetings only rather slowly under the weight of grass, feet placed securely on the ground. When we reached the long, low, wooden building that used to house scheduled caste people, where Karishma's buffalo lived, she climbed nimbly up to the loft and I tossed up the bundles of grass for stacking inside. Her father had returned before us and had fed the buffalo.

On that day, as every day, Karishma was contributing to the household. She became engaged while I was in Gau and later married, moving to town with her husband and no longer gathering fodder for household animals. Her willingness to do this work was

part of what impressed her in-laws in choosing her as a bride for their sons, and probably part of why they still wanted her as a daughter-in-law despite the fact that she refused to marry 'joint' i.e. polyandrously as they first suggested, marrying only the eldest of the brothers, not both of them.

The house or household can be seen as a fundamental unit in Gau. Each person would have a duty of work to the unit, which was the family as in the household, not cousins (clan members), not neighbours, not affines. The responsibility of household members to their household is to stay healthy and capable. They can then expect sustenance and care from their household.

Work as a solution to the problem of the cold

This chapter started off looking at the problem of the cold, and why illness was a problem, going on to the duty to work and the household. Returning here to the original question of the problem of the cold, I next look at how this is solved in Gau. I have made efforts to illustrate the nature of work in Gau in order that the work solution to the cold should be comprehensible to a reader accustomed to spending most days in more or less heated boxes (rooms).

Work, as I found when investigating how people dealt with the cold in Gau, is in fact a major solution to the problem of the cold. While sitting on plastic sacking outside Anjana's house one day, I asked the grown up girls there from a few neighbouring houses what they do to stay warm in the cold mornings. They talked about the morning as a time when you feel cold, but you soak (*senkne*) the heat by the fire, sitting on the floor you do not feel the smoke, and then you go out to work (for fodder), and you *get warm through working*.

On another occasion I was told that when it is cold you wear a jumper and a shawl and socks in the morning, and then as you work you get warm. Then in the day it is ok, and in the evening you burn a fire. There are other material methods of warmth in Gau: clothing (synthetic jumpers, knitted recreationally and often several worn at once),

quilts at night and in particular the fire, used for warming the body after being out in the cold, or for warming milky tea to drink or water to wash in.

The work of the fodder, then, warms the bodies of the women (and men) who gather it, and thus keeps them safe from illness and discomfort. In a life lived outside it is the body, rather than the house or vehicle which encounters and regulates the experience of weather. People create their own climate in the movement of the body. The temperature and moisture felt by the body is not only to do with what comes out of the sky, but to do with the various ways in which people block, welcome and modify these weather flows of temperature, moisture, wind.

Heating the body and climate change

In this chapter I have attempted to describe work in Gau as bound up with the (internally strictly hierarchical) household. This subsistence work was unlike the waged labour which members of households in Gau would also undertake (see chapter five). The work meant that people in Gau would be outside most of their waking time, and thus exposed to the winter cold (during the cold winter rain they would not go out to work). The work itself, though, heated the bodies of those working through their active movement, safeguarding them from both discomfort (although many people in Gau worked despite old injuries, not all of which were properly healed, see Jerstad 2014) and the risk of illness. Although people in Gau wore thin synthetic jumpers and sat by the fire when at home, they did not refrain from working in the cold but explicitly welcomed the work as warming. This bypasses the ratcheting system of ever-increasing energy demands that Shove has described (2003), with the assumption that labour must be waged, because only then can energy be purchased and enclosed space heated, within which is situated the body which thereby does not become unpleasantly or dangerously cold. Gathering fodder, people in the village of Gau would contribute to their household, and in the process heat their bodies to comfortable and safe levels.

For people in Gau, the benefit of staying warm through working in the cold is clear.

From the point of view of scholars, policymakers and other stakeholders with an interest in climate change, both in patterns of energy use (mitigation), and in how to safeguard bodies in the changing weather (adaptation), however, I posit this idea of work as warming in itself as a contribution to thinking about how to keep bodies warm. In shifting the focus from how to warm spaces (rooms) to warming the bodies themselves from the inside through activity and in particular movement and exertion, I would like to take seriously the way people in Gau solve the problem of cold.

In Shove's (2003) thoughtful work on technical solutions to practical problems such as laundry and bodily hygiene practices in postindustrial contexts she has gone into the background of how some of these practices emerged, and what effect the changes have had on social life. For instance, in the decline of the use of the Japanese *kotatsu*, a heater covered with a rug under which families would tuck their legs, houses became uniformly heated and family sociability in Japan changed as a consequence (Wilhite et al. 1996). The seated family in Japan would stay warm around the *kotatsu*, while other areas of the house remained unheated. This changed when heating systems changed.

In this chapter I have been describing the contrast between heating by moving around and the heating of spaces. It is possible to see the relatively static lives lived by those who have central heating or a form of heating evenly dispersed through the indoor spaces they inhabit as related to this heating. That is to say that being seated is because of the heating, rather than the heating being because there is a need to be seated. I have described the work practices in Gau and how they form a life which is lived in different thermal terms from a heated situation. In this context the movement of the body provides the energy for staving off the dangerous cold. All human bodies are vulnerable to the cold (and the heat). Thermal regulation is practiced, then, all over the world. Thermal regulation is a question of energy use. The question of energy is partly a question of how to keep bodies safe from the cold (and excessive heat) - through work or through closed housing and energy heating systems. Those who work on climate change issues are concerned with the question of what kinds of fuel are used to keep bodies safe in this way (Jerstad 2016). By writing about the energy coming

from within the working bodies themselves I would like to expand the definition of energy in this conversation, to open it up beyond conventional ‘consumable’ energy forms.

Chapter 3: Somatic relations of substance: water buffalo in the heat

Fig 14 Harvesting wheat during the hot season

Having gone to cut fodder in the hot season, Karishma and I carried it on our heads to their wooden cowhouse below the village. It consisted of a ground floor and a low upper room, now used for fodder storage. Outside were piles of manure and twigs waiting to be bundled for firewood. In the grandparents' time low caste people used to live there, she told me, while she gave the buffalo their leafy branches. Karishma also gave a small bundle to the newborn buffalo calf, which did not seem to know what to do with them. From their animal house the view across the valley to hillside pastures with dry grass was very good, and the banana trees shimmered in the heat of the air.

So far this thesis has established how life in Gau takes place in and around the household. Next, in chapter three the work described in the previous chapter will be linked to the reason for doing the work – i.e. the animals for whom the fodder is gathered. This chapter takes the analysis beyond the people themselves and acts as a contribution to an ecological anthropology 'in which human lives are bound up in processes of production with the lives of animals and plants, weather and the land' (Ingold 2012:431). Building on the previous chapters on illness and work in the cold, it describes how keeping water buffalo shapes the lives of women in the village of Gau in the hot season. By inquiring about the care of the buffalo in the heat, I access the problem of the extensive effort expended by women, as described in the previous chapter on work, to sustain the buffalo in Gau. Women would feed the buffalo and regulate the temperature for them in the risky heat by washing them in cold water and keeping them either tied up outside or with the door open at night. As throughout the thesis, my focus on women derives from the access which I had in Gau, and in this case the *Pahari* women did have a particular responsibility for the dairy bovines. Men contributed, but were often away working in town and would only rarely carry out tasks such as milking.

Haraway asked '[w]ho should eat whom, and who should cohabit?' (2008:6). The word 'should' is operational here, describing the moral-ontological process of social world-building in which animals and other people are known and where 'animals serve all at once as commodities, family members, [and] food' (Mullin 1999:215). Haraway's question refrains from distinguishing, when applied to this context, between the milked bovines and the lactating human mother. This chapter focuses on a tangible side of human-animal relationships: the material exchanges with the animal, in which the somatic materials make up part of a relationship with duties and expectations.

This is the first hot season chapter. As Gau warmed up from March into the blistering heat in May-June, the mustard plants turned yellow, were harvested, and then the same happened to the wheat. After the heavy harvesting work the fields lay bare and stubbly until the first rain of the monsoon in mid June when they could be ploughed and

prepared for the maize crop. Some villages planted onions which were very demanding of water, further up the pipeline, causing the water pipe to run dry, it was said. People in Gau would grow tomatoes as a cash crop during the monsoon, and for this the manure had to be spread on the fields in preparation. The Vishu festival happened in early May, with fairs in a number of villages. In preparation for this the whole village cleaned and plastered houses and courtyards and most people got a new set of clothes. Throughout the hot season in Gau people would work early in the morning and take a rest after lunch, and then work again in the cooler late afternoon.

I start this chapter by exploring how the human-domestic animal relationship has been framed in the literature, emphasising the potentially coercive efforts on each side. Women sustain buffalo, the buffalo in turn sustain women and everyone else in Gau, and perhaps this mutually sustaining relationship characterises women's lives almost as much as it circumscribes those of the female buffalo themselves. I then use the conundrum of the threat of the leopard at night in Gau to access the importance of the thermal regulatory efforts the women do on behalf of the buffalo, describing all the work that goes into looking after the bovines. The purpose of the buffalo in their milk production is the subject of the next section. After this an investigation of the literature on milk looks at the kinship and hierarchy dimensions of the buffalo milking. Having established the buffalo as valuable beings, the following section looks at how the women regulate the heat for the buffalo as part of the larger nourishing and caring work that they do for the bovines. This is done with reference to the risk of illness from the heat. Finally, I argue that all this care, work, and nourishment looks a lot like what goes on within the household. The buffalo is a productive dependent and subject to the same hierarchy that characterises human relationships in the household.

Three readings of the human-domestic animal relationship

The keeping of domestic animals by humans has been understood in a number of ways. In this section I first describe two understandings with very different moral implications, and then a third, more harmonious one (with its own moral dimensions).

The first framing I will present here of the keeping of animals uses the analogy of human slavery, where the keeping of animals for agricultural and domestic products and labour (and reproduction) is analogous to the keeping of slaves for agricultural and domestic labour (and reproduction, including wet nurses). Douglas noted in her analysis of *Leviticus* that '[c]attle were literally domesticated as slaves' (1966:68), and Tapper (1988) argued the same. This view was most famously put forward by Bentham, the political philosopher, over 135 years ago, who stated that '[t]he French have already discovered that the blackness of the skin is no reason a human being should be abandoned without redress to the caprice of a tormentor. It may come one day to be recognized, that the number of legs … are reason[s] equally insufficient for abandoning a sensitive being to the same fate*' (1879:cccix)*. In the literature on slavery, the justification of the keeping of slaves with reference to the care provided for them is analogous to how women in the village of Gau would talk about their domestic bovines, whose reproductive and movement capacities were arguably more circumscribed than those of most slave populations, though they provided bodily substances rather than labour (which the oxen provided), and were subject to only minor beatings when they misbehaved. The slavery analogy for domestic animals has been alien to western thought because slavery is a social relationship, argued Ingold (2000:74), considered impossible in this context because animals belong to the sphere of nature and people to that of culture. This chapter contributes to the literature establishing that, in fact, as humans are just as natural and can relate to animals in social ways, this is not the grounds on which to repudiate this analogy. The people of Gau (as elsewhere) live in a world that remains both natural and social.

The second framing of the domestic animal-owner/carer relationship is one that turns the question of domination and control around, arguing that when humans have changed their lifestyle so dramatically to accommodate the lives and care of domestic animals, then this could be seen as a convenience for the animal population, who

merely have to be fed and cared for. Domestic animals may be defined as those which are under the control of humans, but this could also be read as a form of control or demand coming from the animal population. This concerns the question of whether the extensive work (covered in the previous chapter) done by the women to coincide with particular needs of the bovines could define the women themselves as domesticated. It has been argued by Leach (2007) that in domesticating animals, humans 'accidentally' domesticated themselves. Evans Pritchard commented to the same effect that '[i]t has been remarked that the Nuer might be called parasites of the cow, but it might be said with equal force that the cow is a parasite of the Nuer, whose lives are spent in ensuring its welfare' (1940:36). Women's lives in Gau are determined by the buffalo to the degree that they must stay in the village, to go elsewhere would be frivolous, only countenanced in cases such as the need for serious medical care or the wedding of a close relative. At the time of the May wedding, Pankaj milked the buffalo because both his daughter Anupriya and his wife Poonam Devi were coming to the wedding, though for much of the year I spent in Gau he was not in the village. It would be frivolous for women to go visiting outside of the village because when they are elsewhere who is to look after the bovines? Someone else must do this extra work, it simply *cannot be left undone*. A woman who is sitting around and having tea, or pausing with a load of grass on her head when the evening drums from the temple are heard will make her excuses and hurry off, saying 'the buffalo will be hungry' or 'I'm late to water the oxen'. So in the polite neighbourly talk which is used to manage and negotiate fragile and fraught relationships, which I cover in more depth in chapter four, there is also the essential non-criticisable core of the primacy of importance of the buffalo and the necessity to provide care for them.

According to the third framing of the domestic animal-human relationship, which refrains from laying blame on either side, authors like Clark (2007) wrote that though factory farming is hard to morally justify, other forms of keeping domestic animals (and the zoonoses that move between them and the human populations) may offer benefits to both populations. This point of view is congruous with Sahlins's (1972) generalised reciprocity. Other authors have also argued for a relationship that is mutually beneficial to both parties (Zeuner 1963 for instance, O'Connor 1997). This

view sees the relationship as a symbiosis which takes different forms with different species. The idea of pure domination over the animals is discarded by those who take this view as too simplistic, because, after all, '[w]e do not feel forced in the social world...to choose between exploiting others for personal profit or avoiding all direct contact' (Ingold 2000:69). And in the relationship that the women in Gau built up with their dairy buffalo, as I hope to show, the particular situation they find themselves in together is neither of these. According to Despret, '[t]herefore, the questions that breeders think should be addressed are not the differences between human and non-human beings but rather the differences between situations, which offer both humans and animals different opportunities to accomplish subjectivities' (2008:123). In fact, these are situations in which both humans and animals are fulfilling their goals (Despret 2008:128-9). The bovines in Gau could be seen to be part of this kind of mutually sustaining relationship with the women. This 'third way,' assumes harmonious relationships where there is mutuality in a kind of symbiosis. I return to this later on in the chapter.

Having established three framings of the domestic human-animal relationship, I will now turn to the situation of humans with animals in Gau in order to understand how these framings may be applied. The salient dimensions of these frameworks as applied to Gau are those of *care* and the alleviation of heat, which in the slavery analogy is about the alleviation of physical suffering to justify the continued coercive control, and in the human-domestication analogy is about the work which occupies the women through most of their lives, while in the third interpretation it is about the buffalo providing sustenance in mutual cooperative work with the women who they sustain.

The forest, the leopard and the care of the buffalo

Below Gau, and across in a wide band between the fields and the river, itself so far down it could not be seen, was the forest. In the forest were curry trees, and trees with white leaves for fodder, trees with sandpapery leaves for scrubbing the wooden floors and trees with large brown pods with milky flat edible seeds, which people used to eat

in the past, according to Karishma. Priyanka, a scheduled caste woman, showed me the pods one day - she was going to take them back for her children as a treat. The forest had plants and trees which were edible, medicinal or useful as soap or to make rope. These days, though, people would buy soap, and generally use wood ash to wash up with. They would still use the two toothbrush bushes, one spiky one, with a sharp peppermint taste, and the other one, leafy, with a softer, minty taste. In contrast, around the fields there were mainly three types of fodder tree, *biul* and *gorial* for the cold season and *karaik* for the hot season. The forest was also inhabited by wild animals. At night in the village I would find the howling of the foxes (*lomri)* strangely comforting. The *lomri* also came into fairytales as a morally ambiguous character, capable of eating the dead. *Lomri ki shaadi*, the fox's wedding, was a phrase used to describe when it was raining and sunny at the same time. Karishma had once seen a bear (*baloo)* in the forest, when she was maybe eight years old. At that time they had gone to collect firewood, but they ran back home and after that, she said, they did not go to the forest for firewood. A third fierce animal in the forest was the leopard (*baag)*, a brownish cat somewhat larger than a dog, Poonam Devi indicated, showing me with her hands how tall it stood. Pankaj, her husband, explained to me that the *baag* was actually useful for humans: it has this benefit, he said, that it eats the monkeys which would prey on the maize crop during the monsoon. Sometimes the *baag* would also eat dogs, if they were tied up; the dogs were put to watch the maize for the monkeys. And sometimes they would eat buffalo calves or goats. This could happen during the cold season, though at night the animal houses were barred shut. But it happened frequently in the hot season, when the water buffalo would be tied outside with their calf, or the door to the animal house kept open at night.

One day during the cold season a mother of four young daughters, whose animal house was just above the road, close to the village, discovered that the *baag* had got in through the window and dragged out the sizeable buffalo calf, which must have still been alive, as there were traces of manure on the drag-trail, as well as of blood. The calf had been dragged across several fields of green wheat before the *baag* fed off it, apparently 'drinking its blood'. The corpse was dealt with the next morning by people of the caste which can deal with dead bovines, which would be considered polluting

for others. Later on that year, in the hot season, a buffalo belonging to another family was tied up outside, further from the village, and the *baag* had come and attacked her calf. She had fought to protect her calf, and in the struggle had pulled up the stake holding the rope she was tied to, and chased the *baag* quite a way, dragging the stake behind her. The calf, though, had been bitten so severely by the *baag* that it died. So the known risk of the *baag* would be braved nightly for those keeping young animals. Every family I talked to had lost at least a calf or goat to the *baag*. Karishma explained to me that when you put the buffalo mother near the door of the animal house, she would fiercely protect her calf, further in, from the *baag*. Her elder father, a keen agriculturalist, said that you can do certain things like this but ultimately when the *baag* sets out to hunt, it will kill something. The villagers could, however, have left the sturdy wooden doors closed so as to guard against the depredations of the *baag*. When dealing with a very similar situation in the Netherlands in the postwar period on the farm where he grew up, Harbers described how they would open up the chicken sheds at the back on hot summer days so as to provide some cool breeze and avoid the chickens being stunned by the heat. However, the stoat would come in through these gaps, attacking the chickens and drinking their blood. So they decided to block up the sheds again, keeping out the stoat at the cost of the comfort of the chickens (2010:154).

Fig 15 Track made by the leopard dragging the buffalo calf through the young wheat

The dairy buffalo were one kind of animal in the village of Gau itself, but not the only one. Every household in Gau had animals: most had buffalo or cows; some had goats as well. One low caste household had a chicken. Dogs and cats were associated with some households, and mice and sometimes snakes lived in the grain stores. One household had horses, which were hired out to carry materials for construction, as wheeled vehicles could not access many of the fields and houses. Before schooling became prevalent the children used to have time to herd the goats and sheep, and men would take them to pastures elsewhere, following them for months (Mehta 1996:184). This history is reflected in stories and the songs sung at weddings and festivals. It is a recent history, as illiterate old ladies would tell of childhoods spent grazing the herds. In one *Pahari* song the new wife begs her husband not to go away with the herd so soon after they are married, and he relents, saying he will ask his father for permission not to go, but his father says he must go and so he goes, for a long time, that is, until he and the other men going have eaten up all the food they brought with them. Oxen

and goats were still herded in Gau, by the elderly and occasionally by children. The buffalo, however, would not be herded, but stall-fed. This was because they were not considered safe on the steep mountainsides. One of Karishma's oxen fell off the hill and died; they had been kept in the forest, and checked on now and again, but they had not had enough labour in the household to herd them. I actually observed an ox fall off a hill when out on the mountainside north of Gau, and the buffalo are less sure-footed. Karishma told me how nervous she got about moving their buffalo between the dry and wet season animal houses, lest they fall. The places in which grass is cut would often be very steep. Fodder would be gathered from family land in designated areas around the village. Many hours would go to cutting and carrying the grass and leafy branches back. The work that the women did in fetching fodder was in order to support these bovines. They had to have green fodder such as leafy branches or monsoon grass, otherwise they would not provide milk, Karishma explained. Dry food such as the chopped up straw after the wheat harvest, husky maize stalks or dry grass, which could be stored, was not enough. The relationship between the fodder fetched and the milk produced was thus quite direct. When I went to help fetch fodder I would often be offered food, or, as when I went with a scheduled caste girl in mid-April, I was given a cup of warm milk on my return, probably from the animal who was going to eat the grass I had cut and carried. Scheduled caste or poor *Rajput* villagers who worked cutting and carrying fodder or manure for richer households would be paid in cash and also in kind for this work. The pay was very low – 50rs/day for a woman's work (enough to buy a few kilos of grain at the ration shop; a week's work at this pay would be enough for a set of plain clothes); they could get more at the factories in town. High status families would complain that it was hard to get this kind of labour these days.

Poonam Devi, with four grown sons and a daughter, whose only daughter-in-law lived in town, would get up before dawn, at four or five in the morning. She would get up in the dark to milk the cow and buffalo. Then she would make tea, and wake those (such as her daughter) going for fodder who would come and have some and maybe some *roti* with chutney or just dipped in the tea before going off for the day. She would go to carry water from the stream for the cow and buffalo to drink when the pipe gave out in the hot season, give them some of the previously gathered fodder and then light

the fire and warm up some tea for herself. She would set the electric milk-churn going: it slotted into the top of a round container, though her neighbour would churn the milk early in the morning by hand, using rope to spin a wooden paddle forwards and backwards. Then she would fill the milk can so that her son could take it with him on the bus for the tea-shop they sold it to, on his way to school. In early April she came down to the bus stop with me to catch the 7:30 bus into town, bringing the milk to be sent to the *dhaba*, tea stall. She worked slowly that morning, finding things with difficulty, having already been working hard for hours, and very tired. Then she would wash up after everyone's breakfast and go for fodder herself, but be back in time for lighting the fire to cook lunch. The buffalo also had to have their manure cleaned out, which was done by hand, the clods piled outside to be carried to the fields when dry. The carrying of water and fodder could be from quite some distance, the large bodies of the buffalo consuming a lot. The care of dairy and meat animals took up a significant part of the working day in Gau, like at Campbell's fieldsite in Nepal, where 'a development team ... are lucky to find even a quarter of the population [in the village]. The rest are *where it matters for them to be*, with the animals' (2005:83 emphasis added).

Water would be labour-intensive to fetch from the stream when there was none in the pipe (intermittent throughout the hot and rainy season). When I started cooking for myself during the rainy season, and wanted to use water from their tanks which had arrived from the pipe and was being stored, this sparked a conflict with the family I stayed with because they thought that I should fetch it from the stream, perhaps because cooking for myself was seen as a sign of my forming a separate household. Poonam Devi repeatedly brought up the topic of the buffalo, and how she had to have enough water for the buffalo to drink. At the time I found it difficult to make sense of what I was entitled to in the household, but in retrospect this may have been a statement about my lack of productivity in comparison to the buffalo. This was, I think, true in cash terms, as at circa 30rs per litre of milk and circa 5 litres per day the buffalo were earning my monthly rent in ten days.

The manure would be carried on the head to the fields and then dumped and spread

out at particular parts of the growing season – the fields were never empty for long. According to Nanda and Nakao, an estimated 40% of the buffalo's value is in its dung (2003:450). Although in other parts of India the dung is dried and used for fuel, in Gau it was mostly spread on the fields. Several forms of work were associated with the animals. In early monsoon, for instance, Karishma and I went to spread manure on their large field. They had the oxen grazing while we were working: three of them, the two younger ones pretty high-spirited. Karishma observed when her brother chased them that they sort of galloped across like horses. The field is right by the school and on the path from the bus stop, and a lot of people were passing on the road, including adults and children grazing oxen, one girl taking basket after basket of manure on her head and Karishma's friend's dad taking water (at least three times) for their buffalo or cow.

The buffalo, then, would be safeguarded from the excessive heat, fed and watered, milked and cleaned up after, providing hours of daily labour. This work was not optional. As I was told in mid April when it rained 'one must go [to cut and carry grass], if there isn't stored grass, one cannot leave them hungry'.[5]

The purpose of the buffalo: the milk of the buffalo

So what is it about the buffalo that merits all this investment in the shape of work? It was a challenge at first for me to understand why so much was invested in these animals for such apparently minimal returns. The assumptions about dairy animals I arrived in the village with, I discovered, had much in common with a development discourse which has since gone out of fashion. The essence of this argument is that grains and pulses together make up a healthy diet, and that the poor should not waste resources on animal protein, which is labour- and land-intensive compared to plant crops. In a food crisis report from 1959, for instance, the Ford Foundation recommended implementing a taxation policy to reduce cattle numbers in India (Libing 2013:28). Noske (1997:32), expressed a similar concern about animal versus

[5] '*jana hai, agar ghas nahi rakha hua, bhukh to nahi rakh sakte hai*.'

plant cultivation, with regard to the meat business. In learning about what the buffalo meant to the people of Gau, then, I had to unlearn this bias and be open to the centrality of dairy bovines in life and in necessary dietary terms. That is to say that the bovines were a far from optional component of life in Gau. Of course, my different point of view was helpful in investigating this aspect of life in Gau, as it encouraged me to ask questions and explore this feature which initially made so little sense to me.

In a chapter emphasising the empathetic relationship of people with animals on the farm where he grew up, Harbers wrote '[o]f course, our care was ultimately devoted to the greatest possible milk production' (2010:151). Women in Gau would similarly talk about the milk as a reason to keep bovines. Cattle have been used by people for milk for thousands of years: since the Neolithic in the Near East (Helmer and Vigne 2007, Craig et al. 2005). As Greenfield noted, '[m]ilking allowed humans to harvest animal protein without slaughtering the animal' (2010:30). Ellen and Fukui (1996:20) also used the concept of 'harvesting' an animal. Milk and manure would be produced inside the dairy animal in Gau and then extruded. Unlike the goats, kept for meat, the water buffalo and cows were not edible animals for the Hindu villagers, but produced nourishment through their lactation (and fertiliser through their manure).

When I asked why they kept buffalo, Poonam Devi pointed out that there were few employment opportunities for women in the village and buffalo would provide milk, *lassi*, *ghi*, manure and cash. Dairy animals, like cement *pakka* houses in Gau, were creatures of status, income and banking as well as sources of nutrition. They were not markers of urban status, of cash, opportunity, risky investments with large returns (such as starting a business in town, sending off a son to be educated or to seek an army job), although the purchase and sale of buffalo would run into the tens of thousands of rupees. Rather, village status meant having a source of manure for the fields but also for mixing with clay and pasting on the lower walls of the wooden houses and the animal houses, and between slates on the *angan* (courtyard). It meant having 'pure' milk and *ghi* to serve family and guests rather than bought products which people in Gau told me would often be adulterated and also contain chemicals. This status would be about not letting down the household but also not letting down

the whole village for instance in the case of a wedding, where people explained to me that all houses must look their best or what will the guests coming from outside think?

So the water buffalo and the cows in Gau were kept for their milk and manure,[6] like in neighbouring Utterakhand, part of the *Pahari* region (Mehta 1996:184). In practical terms, *lassi* (soured buttermilk) and *ghi* were consumed daily, and manure spread on the fields for the crops which made up much of the food. As in *Pahari* Utterakhand, the cows had been largely replaced by buffalo in Gau, which provided more milk with a higher fat content. The goddess (*devi*) does not like buffalo *ghi* (clarified butter, used ritually, for instance at funerals), said Urmila, wife of two. Therefore it is optimal to also keep a cow for ritual purposes. In order to provide milk both buffalo and cows had to calve regularly (Greenfield 2010:33). They would be fertilised by means of an 'injection' purchased in the local small town. Among the Gaddi, not far from Gau, according to Wagner, 'the word *injection* itself is a euphemism for sexual intercourse' (2012:107 emphasis in original).

The milk would be sold to a government dairy (the milk car would come directly to the village to pick it up) or to a shop, and used in the household, skimmed to make *ghi* and *lassi*. If there was not enough to use and also sell, then it would be kept for the household. Milk, *lassi* and *ghi* would also be used to make payments to those working as labourers (whether poorer families or low caste ones), or *ghi* as a contribution when there was a wedding in the village. No household in Gau could possibly be without milk, if there was no cow or buffalo or they were not giving milk then milk would have to be bought from the shop. However, from the point of view of the people of Gau, while buffalo give birth in order that they may lactate, women lactate in order that their children may be nourished. Poonam Devi was sitting on the veranda with her daughter Anupriya discussing the impregnation of the buffalo. I asked why she needed to be made pregnant. They stared a little. Then Poonam Devi replied 'do *you* produce milk without being pregnant maybe?' And we all laughed.

[6] In Gau, purchased chemical fertilisers would also be used, particularly for the tomatoes, a cash crop, but also for the maize.

The place of milk in Gau may be further illustrated with the following story. An old lady, sitting by the fireside with her young granddaughter, told me of a tax collector in the days before independence, under the kings, who would go from village to village collecting tax, and the people were afraid of him when he came. In those days they would have a room set aside for the tax collector in each village for him to stay in. Not only would this particular tax collector collect the tax when he came, he would also demand to drink *lassi* made from the milk of the breastfeeding women of the village, and so their babies would cry from hunger on the night he was there. The story continued with a gory finale involving the enterprising villagers in a village close to Gau cutting up the tax collector's own son and serving him up to him as a meat dish, after which the tax collector never again terrorised the villages with his demands for human milk.

In this story the equivalency of human and bovine lactation is highlighted, and at the same time the idea of using women in the way that buffalo are used, and in particular of depriving their babies of milk, is considered heinous. The provision of milk from the buffalo and cows, depriving their calves, on the other hand, is for the people of Gau something only right and as it should be. The reproductive purpose of human lactation, the care that is supposed to be for the child rather than for a senior (male) recipient, is thus emphasised. Both human and buffalo lactation, as Bolton and Degnen pointed out, bring 'female reproduction to the fore as without this reproductive force, milk would not exist' (2010:22). And it was mainly the women in Gau who would do the work of sustaining the buffalo.

Kinship and the feeding of milk

Having looked at the practical sides of the purpose of the buffalo as milk producers, and started to explore the analogy used by the women of themselves as milk producers, this next section attempts to explore this substance in relation to the literature in anthropology on substance, milk and kinship, deepening the hierarchy-laden metaphor between buffalo and lactating human woman.

Bodily substances have been productive of thinking around kinship in anthropology (Fortes 1969, Carsten 2011). Rules regulate food exchange between different castes in India, with for instance raw food permissible as a gift up the hierarchy, while cooked is not (for instance Fuller 1996, Srinivas 1962, Bayly 2001). This system was present in Gau in a less elaborate form, with two main caste groupings. Despite these rules regulating the exchange of substances between people, the oral consumption of dairy products by humans would be seen as not only acceptable, but the way it should be. The buffalo is a dependent who is a member of the household. Does their membership mean that their contribution of bodily substance in the form of milk (and manure) is more acceptable than accidental bodily substance contact (for instance spit) with a lower caste person or member of another household? Or is it that the bovine has a holy purity to it which affects all its bodily substances? And is the acceptability of a bodily substance a privilege or a bondage for the animal?

Fig 16 Poonam Devi feeding the orphaned kid (Photo: Juliette Oxford)

The relationship between the women and the buffalo in Gau would be epitomised in the substances of milk and manure, and in particular milk. Within the household the exchange of substances was regulated. Spit, for instance, was not to be exchanged; properly fastidious persons would take care that their spit not touch the food of other people. Poonam Devi and I were watching the goats eat the leafy branches her mother-in-law had brought them one day. The small white goat had been left by one of the transhumant herder people who were camped nearby at the time, as his mother had died, and had been bottle fed by Poonam Devi, and brought up in the house. He would prance around extravagantly and be shut under a basket to stop him wandering off. As he grew older and progressed to eating grass and leaves, he was put with the other goat and her kid who used to be kept in the cupboard under the stairs (knocking their heads

against the door incessantly), in the little room opposite the kitchen, with the entrance barred but the door open during the day. The three goats were munching on the leaves that day, which were tied in a bundle and hung from a string from the roof, moving around when nudged by one or other mouth. Poonam Devi pointed out proudly that the goat she had bottle reared did not want to eat from where the other goats had been eating, saying that it objected to the spit of the other goats. This was a statement about this particular goat being more person-like and moral than other, ordinary goats which had not been raised in the house. 'To attribute human characteristics to animals is a negotiation of value among humans' (Caporael and Heyes 1997:71). In a similar way, then, to the similarity Poonam Devi was claiming with the goat she had reared, the buffalo in Gau could be more 'like us' than people of other households or castes would be, because the exchange of bodily substances and nourishing fodder with the buffalo happened within the household. In Haraway's Companion Species Manifesto (2003) she used the sharing of spit as a way into understanding the interdependency and even biological mutuality of the relationship between her and her dog. The spit in Haraway's story is about biology and affection, rather than about purity and social control. Here the substance is a positive one to exchange, a counterpoint to Poonam Devi's fastidious goat.

The substance of milk is one of the body, like spit is. But in Gau it brings nourishment rather than contamination (the udders would always be rinsed with water before milking started). And bovines are special in Hinduism, such that even their manure is pure. The taking of the milk constitutes a movement of bodily substance that would otherwise benefit the calf, to the human household, whether in cash or nutrition, and often both. In Turner's work with the Ndembu, the mudyi tree, which exudes a milk-like substance if the bark is scratched, is symbolic of human breast milk (1967:20). It also stands for the matrilineal system and thus the unity and continuity of Ndembu society (1967:21). As in Gau, 'the themes of nourishment and dependence run through' the different things symbolised by the Ndembu milk tree (1967:28). The buffalo both nourish and are dependent on the people of Gau, who are in turn dependent on and provide nourishment for the buffalo.

Milk kinship in Islam is considered under marriage rules, that is to say those who are suckled by the same milk-mother are considered to be siblings (Parkes 2005). Milk kinship can therefore carry the unsettling risk of incest. Working with the Malay, Carsten found that they adhered to the Islamic prohibition against the marriage of milk-siblings, but that children would spend time in other houses in various forms of fostering arrangements. Because of this, women might therefore casually breastfeed a neighbour's or distant kinswoman's child, who might later end up marrying one of her children, thus constituting incest, which people found concerning (Carsten 1995:227). Parkes drew on a number of examples in his consideration of milk-kinship in Islam, including one from Iran, in which Khatib-Chahidi suggested that though milk-kinship was currently rare among urban Iranians, it may in the past have functioned as a system of allegiance between higher and lower status families who would not have allied through marriage (Parkes 2005:314). This resonates with the milk-nourishing relationship between the women and the buffalo as a hierarchical one, with the buffalo fitting into the dependency-worker system of the household.

Wet-nursing was widely practiced in colonial India across religious divides, where European babies were nursed by local women, often *Pahari* hill-women.

> an Englishman, trotted by ... as the man gathered up his reins he called [the old lady's face] a Moon of Paradise ... which doubled her up with mirth. "...Hai, my son, thou hast never learned all that since thou camest from Belait [Europe]. Who suckled thee?" "A pahareen ... my mother. Keep thy beauty under a shade ..." and he was gone. ...she took a fine judicial tone ... — "These be the sort to oversee justice. They know the land and the customs of the land. The others, all new from Europe, suckled by white women and learning our tongues from books, are worse than the pestilence" (Kipling 1994 [1901]:66).

The use of Indian women as wet-nurses by the British in India under colonial rule has been documented by Sen. Infant mortality for European infants remained high throughout the colonial period, and the use of wet-nurses was widespread. Using them was considered healthy, as according to medical accounts at the time the tropical climate made it hard for the European mothers to feed their children (2009:308, 316). The ayah and the wet-nurse would feed and rear the European child while their own

might be fostered out or cared for by others. Bearing in mind the buffalo calf in Gau can colour our reading of the following quote:

> Julia Maitland too felt "obliged to keep a separate nurse for her baby, and see after it regularly myself" (Maitland 1846: 51–52). She complained in her letters home, that otherwise, the wet-nurses were "so careless about their own children" that they "would let the poor little creature die from neglect, and then curse us as the cause of it" (ibid) (Sen 2009:320).

Fig 17 Two buffalo calves, a cow calf and a cow. (Photo: Georgiana Keable)

The food provided for the wet-nurse was important, too (like for the buffalo), and Sen refers to the medical advice with descriptions of how her breasts and nipples should look as serving 'to dehumanise her into some kind of a milch-cow' (2009:323). Here Sen used the animal analogy to convey that she saw something distancing in how the wet-nurse was written about, in the sense that she was not seen as a person in quite the

same way, and the above quote about the conditions for her own babies would seem to support that.

The relationship between the women and buffalo in Gau would be a mutual one, but not literally mutual, the buffalo would not fetch grass for the women, nor would they feed from the women's lactating breasts, like the tax collector in the story. In Hurn's book on human-animal relationships, she wrote about women breastfeeding pigs in Melanesia (2012:8). This is something that she expected would provoke disgust in the reader. In her example the breastfeeding went from the woman to the animal. Like Poonam Devi with the bottle-fed kid, it would be animals brought into the household and sustained, rather than animals providing the sustaining milk. I return to this theme later in the chapter when I consider the place of the buffalo in the household along the other household members. First, though, it is the dangerous heat which is the focus of this first of the two chapters on the hot season.

The riskiness of heat on the buffalo body

Having established the purpose of buffalo, I go on to the core question of this chapter, i.e. how the buffalo felt in the heat and how appropriate care meant regulating this heat. Before doing so, however, I would like to clear up the question of perspective which may arise in the mind of the reader, given the work going on in the field of human-animal relations. This chapter is written from an interest in the perspective of the people, and in particular the women, of Gau. In recent years the human-animal literature has sometimes taken the perspective of the animal, for instance van Dooren's work on vultures in India. The vultures he worked on were dying because cows had been given anti-inflammatory drugs. These drugs were safe for cows but not for the vultures, leading to an increase in the population of feral dogs, when the vulture population declined but bovine carcasses remained. His article deals with the pain of the vulture, in this process of extinction (2010). As it happens, the vulture population around the village of Gau was alive and well. This, however, is not my focus. Expanding my focus to include animal perspectives would have required a different kind of fieldwork to that which I carried out. Though Noske argued that scholars

should be interested in non-human animals for their own sake, deploring the lack of 'willingness to pose the same questions about animals as are being asked about humans' (1997:82), in this chapter I do not attempt to access the pain of the buffalo in the heat in this way. Rather, I am interested in the women empathising with this pain and discomfort that they would see. They were the ones who led me into considering the body and sensations of the buffalo, as at first I could not understand why they could not just close the doors against the danger of the leopard. I am hoping that by taking this approach I will be contributing towards an understanding of what heat meant for the women of Gau.

When I asked about how people in Gau themselves experienced the heat I received blank looks and comments referring me back to my own sensory experience, but when I asked about the animals people were happy to explain how they feel the cold and heat. Women talked about the buffalo in particular, about how they 'can't speak, but you can tell'[7] when they feel hot or cold. Talk of the animals became an avenue in for me to understanding the experience of heat for the people themselves.

The milk is of the women and of the buffalo. The heat felt would be felt on both kinds of bodies, which emphasises the sameness of these bodies. They are of the same *kind*. Buffalo are like us, except they don't speak, said Urmila Devi, a hardworking woman in Gau, referring to 'the shared sensory faculties of human and non-human animals' (Clark 2007:62). Sonja, the elder sister in the wedding family from chapter one interpreted her buffalo's gaze at me, the stranger, telling me she stared because I was a new person and that was why she stared (when she mentioned it I realised that they often did that when I was around).

Villagers such as Urmila Devi and Karishma used the language of sameness in talking to me about the animals. I was told 'they also feel warm, like in our bodies [heat is felt], and the winter weather feels cold to them.' When I asked about their discomfort in the heat, Urmila Devi told me that 'they feel, like us.' Karishma pointed out to me how you can feel the heat on your body, using this to explain the buffalo's thermal

[7] '*bol to nahi sakte hai, pata lagta hai'*

experience. Between people and buffalo in Gau there were thus acknowledged equivalencies of hunger, thirst, milk, care, cold and heat. So discomfort would be hunger, discomfort would also be feeling too hot, and discomfort could be illness resulting from heat, cold or insufficient care. In regarding these as the same or equivalent to the human sensations in Gau, the buffalo carers would acknowledge the somatic sensations of another. The physical sensation would provide an empathetic commonality which displayed the similarity of being. The animal body in Gau would thereby be subject to the same processes and therefore unpleasant sensations of excessive heat.

Care for the buffalo was about sustenance and practicality then, for the animal to remain productive, but it was also about the discomfort of the animals. Karishma would sometimes burn dry manure down at the buffalo house. These houses would be made of stone, plastered with a mixture of clay, dung and water. The smoke would keep away the flies and mosquitoes, which bothered the animals. Caring for the bovines meant regulating the thermal extremes to which they were exposed. In order to keep the buffalo cool, people in Gau would carry water for them in the heat, both to wash their bodies with and for them to drink. While the cows were more susceptible to the cold and had to be let out to bask in the sunshine during the cold months, the hairy buffalo were prone to overheating, and thus had to be tied outside or have their door open during the hot season and be kept in the shade during the day. How can you tell when it is too hot and you need to open the door? I asked in April, as it got warmer. You feel it (on your body) when entering the *baas* (the animal house), various women explained, and also the buffalo move around restlessly when too hot. They would come outside if they feel too hot when you loosen them from the rope/chain, and stand still inside if they are comfortable, it was said. The buffalo carer would enter their house and feel the heat, then leave the door open at night, at some point in spring, around April. Or she would tie them outside. The door would be left open at night in summer, and during the day in winter. In the heat they would be thirstier, so providing enough water was important, while when it got to the monsoon less water was necessary due to the wetness of the grass. In these ways the women worked to safeguard them from hunger and thirst and from uncomfortable and dangerous extremes of cold and heat.

This active care that the women provided for the buffalo in Gau was not necessarily altruistic, but done with reference to their sameness, as well as to their productivity and good lactation.

As established in chapter two, the labour involved in harvesting and processing fodder would heat the bodies of the women in the cold season. In the hot season they would go to fetch fodder and water early in the morning to avoid the worst of the heat. Like physical activity, metabolism is heat producing as well as life sustaining. In research on domestic thermal regulation, Gauthier and Shipworth found that 'the most influential input variable is metabolic rate' (2012:3). That is to say that they found that metabolic rate influences thermal sensation – i.e. how the body feels heat and cold. Water buffalo in Gau would be digesting food much of the time. Without measuring the metabolic rate of the buffalo, it is worth noting this connection between thermal sensation and the digestion of food. The work of the buffalo would happen through the body of the buffalo, physically traversing the internal organs of the animal. In digesting food the buffalo would produce their milk and manure. So in doing their productive work for the people of Gau the body of the buffalo would heat up. In these terms, then, perhaps the carers who would benefit from the bodily products of the dairy beast could be said to have had a particular responsibility to mitigate the negative effects of overheating. One of these effects was illness, which the women would refer to as a major risk from the heat, even causing lactation to cease, and it is to this I now turn.

Illness from the heat

Writing about life on a small farm in the Netherlands, Harbers contended that 'disease and death in general were one of those grey areas where different considerations than the strictly economical played a role. Animal suffering was not simply something that you could ignore' (2010:160). He wrote this despite having described shutting up the henhouse on hot days, which would sometime stun the chickens (see quote above). As earlier established, villagers in Gau would leave the doors of the animal houses open at night or tie the buffalo and cows outside during the hot and monsoon seasons in order to avoid the suffering of the animals in the heat, but also to prevent them from

falling ill. In the previous section I described how women told me about the heat you can feel on entering the buffalo house. Animals would fall ill from the lack of breeze inside, they told me.

Both women's and buffalo's bodies were at risk from the heat. The buffalo, like the women, could fall ill in heat and cold and require particular care. One symptom of being ill was that they would stop lactating, another that they would stop eating. People in Gau would talk about the illnesses of the buffalo in ways similar to how they spoke about the illnesses of people. Like in *Pahari* Nepal, where '[l]ivestock diseases are treated within the same ritual framework as humans' (Campbell 2005:87), those caring for the buffalo would navigate the risks of hot weather to animal bodies on behalf of the animals, and along many of the same principles as applied to human bodies. 'Domestic animals also [as well as people] get ill' Urmila Devi told me. She described a medicine for ill buffalo (in the heat) using wheat flour, onions and cold water. But if the buffalo doesn't get better, she said, they summon the vet. Karishma's elder father told me about a time during the cold season when both his and Urmila Devi's buffalo were ill. They were both ill, he explained, but the care that was provided was different. While she did not do anything in particular to look after the buffalo at that time, according to him, he had put warm embers in the buffalo house at night (because winter nights are cold), burning the fire outside as too much smoke would be bad for them. Then he rubbed her all over with ash, (as you might rub powder on a person, explained Karishma), and when asleep he covered her with cloth (the quilts people sleep on, his brother Pankaj told me). Urmila's family did not do any of this and their buffalo died, while his survived. The survival of his buffalo is due to the one above (God), of course, he said.

The sensation of heat and discomfort and illness that may result from these sensations would be shared between people and animals in Gau. The buffalo fit here into a framework of dependency, care and provision which is, I argue, if not perfectly aligned, then of the same kind as that with which human members of the household relate to each other. In the following section I follow this household line for a while,

exploring what this might mean for the human-buffalo relationship in Gau, building on what has been established in chapter two.

The buffalo and the household

So far we have established that that the buffalo's milk is nourishing for her calf. This milk nourishes the household to which it belongs. It nourishes the household both directly, through the consumption of *lassi* and *ghi*, and indirectly through the sale of the milk. The milk is a bodily substance of the buffalo, which the people drink and are fed by. Writing about people living and working together, Gibson wrote '[i]t is shared activity in itself, and the amicable sentiments generated by habitual cooperation, which constitute the basis of the [companion] relationship' (1985:393). In a similar vein, Haraway (2008:17), wrote '[c]ompanion comes from the Latin cum panis "with bread." Messmates at table are companions.' The relationship between the buffalo and the woman, however, though mutual in the sense of feeding – each feeds the other – is not one where they would eat together in companionship. The women and the buffalo, rather, would work together. There is something shared in this relationship, in the burden of nourishing work, in the subordinated position of both buffalo and woman involving the circumscribed movement for both and in the priority of production and reproduction.

The relationship between the buffalo and their carers does not necessarily become a situation of exploitation. Sahlins noted that 'everywhere in the world the indigenous category for exploitation is "reciprocity"' (1972:134). That is to say that the same situation, for instance of milk provided and food given in return, can be understood as reciprocity while it can equally be read as exploitative. The gift, according to Sahlins, in this case of the care of the buffalo, creates obligation, and thus connection (1972:208). The buffalo in Gau may not choose to leave, but are constrained by particular duties (or 'debt') that they owe to the household. The members of the household are in their turn constrained to care for the buffalo which provide them with milk and manure. Sahlins used the concept of 'pooling' (1972:94, 188), to denote the generalised exchange within the household for everyone's benefit. Pooling is about

contributing according to working ability and then being fed and sustained on the basis of the resources of the household. The contributions of dependent members of the household and of the buffalo and other animals were not tallied in the way contributions to a wedding were, in a little book – so many kilos of *ghi* from this household etc – which would be called in from the wedding household when the donating household had a wedding in the house.

When heat (and cold, and wet, and the availability of fodder and water) is to be negotiated in relation to the buffalo, the care of the animals becomes work on behalf of a life practice. That is to say a practice of work, and work is of life. It is this work that emphasises the women as virtuous, acting persons. As I came to understand it, this seemed to be about the *point of life* for these women. The men would take part in this system, but they were not integral to or responsible for it in quite the way that women were. The patterns of care, for children and for animals, would be devolved to the women. Men would do the work outside the village, negotiating the sale of the milk, procuring rations from the ration shop, migrating for work, buying land, cooking at the government rest house and hobnobbing with politicians.

The woman's actions would be weighted by her responsibilities towards the buffalo, as they would be weighted by her responsibilities towards other members of her household, who also require care and food. The question of care may concern how to be cohabitants of the household, of the economic unit, which feeds and takes care of its members. Outside this unit in Gau the feeding would be much rarer, for instance at weddings or the clan meat-eating at the goat sacrifice festival in January. Other feeding was tainted with suspicions of witchcraft. The household in Gau was thus a unit of social organisation as well as of kinship, and it would be one which the buffalo and land and other non-relatives would fall inside of. They would belong to the household rather than to a particular person, such as the male head of household, who was not morally free to sell land, for instance.

The woman looking after the buffalo would have a duty of care which is non-negotiable. There would be no option for a day off or a lighter load. Among humans

in Gau it was only I who was ruthless enough to ask what would happen if the buffalo were not fed one day. You cannot leave them unfed, people would tell me. Similarly, Campbell found in Nepal that if you do not feed the ploughing bullocks with bundles of fodder it was considered 'sinful' (2005:89), although in Gau these were grazed. So in the mutual interactions between sustainer and sustained this was not an optional duty of care and sustenance provision. Mullin wrote that '[anthropologists] writing about pastoralists ... [argue] against those supposing that pastoralists' attitudes towards their livestock are economically irrational' (1999:209). I posit that perhaps it is the very economic collaborative co-worker dimension that defines this relationship, at least in Gau. The co-worker relationship would be mirrored by that of the humans with each other in the household, thus pooling the labour, as well as the resources.

The buffalo in Gau would do the work of milk producing, and, doing that work, becomes part of the extended household. As seen in chapter two, members of the household in Gau would have a duty to work and would also be entitled to sustenance and care.[8] As with the family, where members of the household would work together on the larger subsistence project, I argue that the animals would also be (peripheral) members of the household, whose contribution was their productive work: the goat by fattening, the dog by preventing monkeys from making off with the maize. The buffalo was part of this work system: in eating and extruding, she would be productive.

However, despite being part of the household, this would not mean she would be hierarchically equivalent to other members of the household. Family members in Gau, as across north India, were never equal: there were heads of household (of both genders) and there were dependents, who would contribute their labour and be cared for and fed. 'Like dependents in the household of a patriarch, [the status of domestic animals] is that of jural minors, subject to the authority of their human master' (Ingold 2000:72). In the previous chapter the onus of doing work for women in the household was established. This is also true for the buffalo. Animals and people, then, would fit

[8] Are these the same? Is to feed to love (as Rudiak-Gould found in the Marshall Islands (pers. comm.))? The buffalo, like Ingold's herd animals, 'are cared for, but they are not themselves empowered to care' (1994:16). They would, however, sustain the people in their household. Is there caring in the nutritious and life-giving substances contributed by the buffalo?

into this hierarchy, with duties of care and feeding applying to both. They would be 'persons who ... participate intrinsically in each other's existence' (Sahlins 2011:2). The emotional and caring relationship with the water buffalo, comprising irritation and annoyance as well as affection, would not only be linked to their role in food and manure production. The co-existence, even 'familiarity' with the animals may have had as much to do with it. Human-buffalo relationships in Gau were productive but personal, reflecting the intra-household human relationships with which they would coexist.

Ducos defined the essence of domestication as the conversion of animals into property (1978). This was a distinction between buffalo and human relatives in Gau, because the buffalo could be bought and sold, while human relatives would be transacted in other ways, most often with marriage, although also adoption. One day I had been for fodder with the shopkeeper's wife and on our way back she milked the buffalo. She is going to sell the cow, she told me, as they also have six goats and she spent the whole weekend and Monday planting tomatoes, and it is too much work, with her daughter at school and no daughter-in-law. In January Karishma and I took the leafy branches to feed her buffalo. She told me that they sold the old one (for 44 thousand rupees) to make the payment on a loan they took up when her sister got married. Then they bought a new one (for 23 thousand rupees), pregnant and also in milk, from Urmila Devi's natal village. To buy and sell the buffalo, she explained, you let people know and someone comes along, or you get in touch with people and ask if anyone in their village is selling one. While cutting vegetables with a girl in a village not far from Gau I noticed a cow wandering round below. She said people let them go when they stop giving milk, so we gave her the leftovers and the girl gave her lots of water even though there was not much water in that season. The animals would thus be both part of and detachable from human society - saleable but cared for. Sahlins argued against the demarcation of the economic and social realm as separate (which led, for instance, to feeling of shock at thinking of women as being traded goods), and that in fact it would be ethnocentric to see it so (1972:181). When the buffalo are considered both socially and as productive beings, they may take their place in the household along with its other members.

Animals in Gau were dependents. Hierarchy in Gau would be constantly present and a feature of almost all relationships and encounters. Relatives would be controlled in their movements, their productive and reproductive activities, their body language, gesture and speech. This section has been about the buffalo as dependent – so kin, but in a clear system of hierarchy that also characterises all human relationships in Gau and north India more broadly.

Dairy bovines and climate change

So, the buffalo in Gau would be sustained, and they would sustain the women. The exclusively female nature of the adult buffalo population roughly mirrors the female weighted adult human population in Gau as a result of polyandry and male out-migration. This chapter has used the question of the suffering of the buffalo in the heat to access the human-dairy bovine relationship. Asking about the buffalo and the heat enabled me to learn about the relationships between working and caring members of the household. Women in Gau, I have described, would talk about the suffering of their animals in the heat. The suffering from the heat and the care that would alleviate it can be read as the kind of care given towards kin members, and thus the kind of claim that people would make to justify the keeping of slaves, drawing on the happy family metaphor (Faust 1981). At the same time the care would involve hard bodily labour, which did shape much of women's lives in Gau, as would support the domestication of humans argument in the second framework described at the start of the chapter. The substance of the milk that the buffalo provided can be seen as part of a relationship in which they would be dependents and part of the household, but awkward members, like the wet-nurse in colonial India, with their calves, their own families, the ghosts of the fathers of their calves, standing in the way of a fully comfortable incorporation, as the families of slaves in the American south stood between the story of slaves as happy children looked after by fond parents (Faust 1981) and how the slaves themselves perhaps saw this relationship. While the women's care would safeguard the buffalo, the buffalo's products would sustain the people. The *ghi* would warm the human body in the cold, and the milk would feed people through all seasons. The idea of sustenance

in this chapter makes sense of the extended (i.e. including the dairy bovines) household in Gau.

The material presented here could, then, support all three of the framings of human-animal relationships referred to at the start of this chapter. That is to say on the one hand the conceptualisation of this relationship as an exploitative one of slavery, and on the other as one where the women in fact have their lives shaped by the buffalo to such a great degree that they could be seen to be the ones domesticated, and finally that of mutual nourishment and sustenance.

Domestic animals, and in particular bovines, have been referred to as part of the climate change problem directly because of the methane that they emit into the atmosphere. Dairy and meat animals have also been widely decried as unenvironmental because of the amount of resources (green matter, water) they consume. However, people persist in keeping them. Cassidy's (2012) review of the contribution anthropological studies of human-animal relationships can make to understanding the impact of climate change on human-animal assemblages necessarily covers a lot of ground. As she pointed out, the different implications of climate change in different parts of the world call for differentiated responses, and while some anthropologists working on human-animal relationships have focused on processes of adaptation and change in specific places, others have looked at how these are affected by larger processes associated with and causing climate change. Although my material lies outside the African and Arctic groups of ethnographies Cassidy reviewed, looking through this adaptive lens, the keeping of buffalo is a way people in Gau would keep a more resilient diverse economy, with their agriculture, cash income, food from the ration shop (notably rice) and the dairy and meat animals for consumption and sale.

The question of relationships of power between people and animals or between people and their environment also relates this chapter to climate change. Questions of fairness and of who has what rights and responsibilities come up frequently in global debates on both climate change mitigation and adaptation, and the relationship between the

women and the buffalo in Gau may serve as an instance of this kind of relationship – simultaneously sustaining, caring and exploiting.

Chapter 4: Heated neighbours and hot houses

Pankaj, Anupriya's father, and Kali, the priest's daughter, were arguing over who I should live with on the day I arrived in Gau looking for a place to stay. He overruled her, taking me to see their unfinished pakka (cement) house, which was standing empty, tall and grey-walled. 'But there are no doors!' I said. I wanted to live in a wooden house. So he asked if I minded sharing with his daughter, and it was thus that I ended up living in a room in one of the smaller households. The cement house remained empty, save for his elderly mother. But over the following months workmen were brought in to make the wooden doorframes and by April the house was ready. Poonam Devi took clay, straw and water and formed the chulha, the cooking hearth, around some bricks, and a priest was called on the auspicious day for starting new things at Navratri to perform the ritual inauguration of a new house. The children of the village were called and feasted, and the house, though still grey, was ready to be lived in.

In chapter three I investigated heat through the dairy buffalos' thermal experience and the care the women expended to alleviate this. That chapter concerned the mutual work and care that made up the relationship between the women and the buffalo in Gau. In this second of the pair of hot season chapters I will venture beyond the household, and explore neighbourly relationships in the wider village through the new cement houses which, though high status, were not thermally comfortable, when compared to the older stone and wooden ones. Tensions about cash inequality between neighbours in the village which were touched upon in chapter one are examined again here by looking at how the thermal infrastructure of the house would be offered to neighbours as alleviation of the heat. In this chapter the thermal regulation of the body is considered once again, where the problem this time of excessive heat is not solvable with labour, as in chapter two, but rather alleviated by the cool dark inside rooms of the older houses in Gau.

Because much of the work in Gau happened outside, the heat would pose a risk to the body (like the cold of the first two chapters), of illness and discomfort. However, during the times not spent outdoors working, the house served to alleviate these risks. Writing about the house implies, as Sparkes pointed out in the introduction to *The house in Southeast Asia* 'a focus on the interaction between architecture and people' (2003:1). This focus has been the subject of a branch of anthropology known as 'vernacular architecture' (Amerlinck 2001, Lawrence and Low 1990, Rapoport 1969, Vellinga 2005), much of which is dogged by romantic assumptions about unchanging traditional building technologies and housing that represents more authentic forms of social life (Upton 1993). There are certainly exceptions to this, such as Klinenberg's study of the 1995 Chicago heat wave (2002). In this chapter, however, I will look at the changing form of housing which is used in Gau, from the perspective of thermal regulation, hopefully thus deviating at least to some degree from the style of writing about architecture that Upton criticised. Ingold focused on the building and the use of the house for status and for living, rather than as an object (2000:173), and I hope that my focus on the thermal experience of the house will make it more straightforward to understand it as a lived structure '[f]or it is in the very process of dwelling that we build' (Ingold 2000:188).

Buildings, as Humphrey observed 'do not just sit in climates, but modify them' (1988:17). Housing is a basic form of adaptation that humans practice for shelter from the sun, wind and rain (Ingold 2000:183), and thus necessarily a point of interest in a thesis on weather. The climate does not stop when reaching a wall or veranda; it may be influenced by the built structure, but it is possible to talk about an 'indoor climate': 'people are no less mingled with the environment when they are indoors than when they are out and about' (Shove et al. 2014:115). The house provides for those that inhabit it a kind of exoskeleton, a sturdy buffer against those elements that chill, drench and parch. Why, then, do people in Gau build (cement) houses which do not achieve the apparently most basic function of a dwelling, i.e. comfortable thermal regulation? Though hard at first for me to comprehend (and I am accompanied by Ferguson in this, as we shall see), the shift in housing practices in Gau appeared to have more to do with other factors. Humphrey wrote that '[c]omfort is culturally defined, and in order to

produce it building materials and dwellings themselves become the focus of economic processes' (1988:17). It is not just building practices I would like to look at here, but also the technologies introduced and how the buildings are used (see Heschong 1979 and Shove et al 2008 for a discussion of this with regard to indoor thermal regulation). The processes underway in Gau and more broadly in many parts of India where the concrete house is in many places the rule rather than the exception, are, indeed, cultural processes, as well as material ones, and the question of comfort in the heat has been my way in to start to investigate this situation.

The other purpose of this chapter in illuminating neighbourly relationships and the wider workings of the village of Gau is well served by the topic of the house, using the example of hospitality and how women would offer each other shade and rest. In Gau, similarly to the Bahuns in central Nepal, 'people actually identify themselves with their houses' (Daryn 1996:81), and therefore the house/household distinction is hard to make. Each household in Gau may use part of a house building or several buildings and people would talk of the number of rooms rather than in terms of a detached built entity. The question of the *pakka* houses is bound up, then, not only in how people actively manage their thermal environment, but also in how they relate to their neighbours, spend money and express success and urbanity (or middle class aspirations). In this chapter the heat is used as a vehicle to access the social relationships between neighbours, the thermal and social salience of the built environment in the village, and also a sense of how important hospitable politeness was in Gau to avoid open conflict, despite the many tensions simmering under the surface of these relationships.

Starting with a reminder about the problem of the heat, I give a brief overview of the issue of cement in different parts of the world as a background for the chapter. Then I look at housing in its material form in Gau, and the doubtful thermal qualities of the concrete houses when compared with the older wooden and stone ones, still forming the bulk of the village housing stock. This is followed by a section on how *pakka* and wooden houses differ in how open they are, which has implications for the interactions between neighbours who offer the shade of the house to each other. A section on

neighbours connects the problem of excessive heat felt on the body to overly heated social interactions between neighbours that would be disapproved of in Gau. Then I introduce hospitality and the polite offer of the house as heat alleviation between neighbours, followed by how this differed between the different kinds of houses. Next I explore how fraught neighbourly relationships were managed through the refusal of this hospitality, which threatens the integrity of the household, were the neighbours to become guests. Finally, in concluding I relate the themes of this chapter back to the climate change issue.

The problem of the heat in Gau - a reminder

As seen in the previous chapter, during the hot season people in Gau were consistently dealing with the problem of heat. Health risks in the heat, such as heat stroke, are one of the effects of the changing climate (Baer and Singer 2009:89). Heat would be felt on the body in Gau, but alleviated by means of external structures, whether it be the landscape (the windy side of the hill), built structures, or trees, as Longhurst and Chambers observed: '[t]he physiological importance of shade and reduced heat stress for human beings, especially in hot seasons, is so obvious that it can be easily overlooked' (1986:45). The body, buildings and different weathers would be mutually present in the village in an ongoing meeting and shifting of characteristics such as a breeze, sunlight blockage and sweating. Dealing with the heat for people in Gau would involve movement, rest, shade and social exhortations. These strategies would map onto each other, interweaving and in constructive tension with material and social imperatives.

Because of the necessity to work outside, heat in Gau presented a challenge for the fragile human body. During the hot season (April-June), work would go on, with an early start in the cool mornings and a rest after lunch, when the whole village would quieten, except for the intermittent buzz of the flies. An older lady told me that 'we don't work in the sunshine'[9] i.e. the heat of the day. After ten or twelve, and before

[9] '*kam nahi karte dhup me*.'

three or four, were not considered good times to be working in Gau. Whether asleep on the veranda or drinking tea in the courtyard, there would be cool in resting, staying immobile, being in the shade. People would not expect visits at that time. So when I came visiting too early after the siesta in the hot season, people would say in a loud, surprised voice 'have you arrived in the sunshine?',[10] meaning 'come back later, we are resting.' As with every form of weather, there would be 'right' and 'wrong' ways to deal with the heat in Gau.

Pakka houses all over the world

Before going on to detail the housing situation in Gau, I turn to the global phenomenon of concrete housing. Concrete and brick housing is becoming usual in many parts of the world (Forty 2012) and is prevalent in urban areas in India. The emergence of this form of housing in recent decades was discussed in the Indian media in the wake of the Utterakhand floods of 2013 (see chapter five) as a potential contributing factor to the scale of the disaster, making the infrastructure more vulnerable. So Chopra, for instance, wrote '[w]ith utter disregard for the State's mountain character and its delicate ecosystems, successive governments have blindly pushed roads, dams, tunnels, bridges and unsafe buildings even in the most fragile regions' (2013). In neighbouring Bangladesh, Gardner (1995) wrote about the large, empty concrete houses built by migrants to show off their London cash (see chapter five on the migration situation in Gau). In northern Sumatra, though, Rodenberg posited that '[t]he fact that Batak houses are no longer newly constructed may be due to the difficulty of obtaining timber, as much as a self-conscious attempt to emulate a national style. Changes in the manner of house construction are a result of the increasing commodification of the economy,' (2003:117). The economy in and around Gau was fairly commodified, and certainly timber was incredibly expensive, due to the stringent anti-deforestation policies of the Indian government.

[10] '*dhup me aai*?'

Writing about the house in Southeast Asia, on a material comparable to cement in its 'modernity' and thermal properties, Waterson observed that:

> the remarkable popularity of zinc ... [when] it rusts quickly, provides no insulation and so is unbearably hot in hot weather and cold in cold weather, and when tropical rains descend the noise brings conversation to a halt. ... Yet, even in places where it is more expensive than traditional alternatives, it is often regarded as prestigious and is a most coveted item ... In the same way, ground-built houses of stone or concrete, though they may actually be less well adapted to local conditions, often come to be viewed as highly desirable and prestigious (1990:87).

Why, though, might this be the case? What is so appealing about concrete and other materials such as zinc? According to Harkness, Simonetti and Winter (2015:313) '[i]n the sociologist Zygmunt Bauman's sense, concrete perhaps epitomizes a fixed or solid type of modernity.' As a material it is modern and urban, despite being mined from the rocks across the valley from Gau. But perhaps 'modernity' is its own answer. In a chapter called 'cement and speed' Taussig wrote about the concrete houses in Guapi, Columbia, heavy with tropical mould, and the speed of motorised rivercraft, both signs of modernity among the wood and the mud and the hand-poled canoes. '[C]ocaine' he said, 'is what allows cement to rise in the streets of the coastal town like dream castles' (2004:169). The new concrete houses in Gau represent something dreamlike as well, where the erecting of a house which does not account for thermal comfort like the stone and wooden ones do could be seen as an aspirational statement distancing lived somatic sensation from an ideal of a particular kind of lifestyle, as if high-status bodies were less susceptible to the heat and the cold, or as if the cash for ceiling fans and electricity may be so readily available that there is no need to have optimal walls for thermal regulation.

Ferguson, in 'Global Shadows,' wrote about his confusion on this subject, and offered a broader perspective. In the mountains of Lesotho where he was living in 1983 he had learnt to appreciate the older Sesotho round houses, made of mud and stone, with thatched roofs. They were 'admirably insulated, staying cool in the summer and warm

in the winter' (2006:18), and were locally made with local materials, while the newer, 'European-style' houses were expensive, uncomfortably hot in summer and cold in winter and he also considered them ugly. Puzzling over the preference for cement houses with galvanised steel roofs, he asked Mr Lebona, an older man he knew well, why he would want to build a rectangular 'European' house, given these differences. Mr Lebona replied by asking him about his father's house in America, whether it was round, whether it had a grass roof or a dung floor, and finally, how many rooms it had. No, answered Ferguson, it was square and had neither a grass roof nor a dung floor, and after some thought, that it had ten rooms (the local 'European' style houses usually had one or two rooms). Mr Lebona let this sink in and then told him '[t]hat is the direction we would like to move in' (2006:18). Ferguson used this anecdote to make a point concerning inequality, that the differences in building materials and techniques may not 'only' be cultural, and that in fact viewing them as cultural could obstruct reading of how they may be seen by those who live in or aspire to them as part of the wider world. In this chapter I do not come to any conclusion regarding the broader meaning of the concrete house in global relations, but my argument (focused though it is on thermal regulation and neighbourly relationships) is part of a wider conversation happening about this particular change in forms of housing.

The *pakka* house in Gau and its thermal qualities

Fig 18 A pakka *extension*

Though most houses in Gau were the older wooden slate-roofed ones, the village landscape was changing. The new brick and concrete, or *pakka* (this word means solid, proper) house, was high-status, with urban connotations, and demanding of cash.

When my father was visiting, we had lunch a few houses uphill from where I lived. We sat inside the smooth upper wooden room on white sacking. Ram Lal, the son of an old lady I knew, who works building *pakka* concrete houses, said that concrete houses are cold and hot at the wrong times, whereas the wooden house is like 'air conditioning'. He told me (talking to my father, but I translated) that the concrete kitchen he had built for his extended family fifteen years ago had 'gone bad' while the wooden house built by his grandfather seventy years ago (in which we were sitting) was still going strong. It served the purpose of the house, which was to remain cool in

excessive heat and warm in excessive cold, as well as to keep out the cold rain. The *pakka* houses were controversial for not meeting these criteria as fully as the wooden ones.

Over the past ten years or so, concrete houses and in particular concrete extensions of the wooden houses had sprung up in Gau. With 40 households overall, there were three fully brick and concrete houses, and at least 16 with a component or extension made with concrete. A number of these extensions were just a single room such as the kitchen Ram Lal had built or a bathroom. Separate marriage, that is to say non-polyandrous, or polyandrous but with the group of brothers split up into two households with a wife each, has fed household increase in Gau.

Pakka houses would be made with bricks, steel girders and concrete. Door and window-frames were done in wood, and carpenter craftsmen would be hosted by the family as they made these relatively expensive elements. Newer *pakka* houses would include expensive fancy tiling, ample plug sockets and fans in the ceiling. *Pakka* houses do not have to be maintained, you make them once and then they are there, explained Anupriya's heavily pregnant sister-in-law who lived in town. In the plains village in neighbouring Kangra where she grew up houses had been made of labour-intensive mud brick. However, older *pakka* houses in town (including hers) would leak. The roof is flat, so water would pile up during the monsoon and eventually seep through. This was patched up with cement poured over the part with the crack by Pankaj, her father-in-law (Anupriya's father) and one of his sons.

The new houses altered the thermal experience of those living in the bare concrete rooms, stuffy in the heat and chill in winter. At the same time they were a highly visible statement of status differentiation in the village. Nominally all families (except low caste ones) in Gau were equal, that is to say that every senior married woman went to the women's meeting, and a (usually male) representative from every family would go to funerals and the full *panchayat* (village council) meetings. However, not every family had a concrete house or extension. This made building such a house or extension a way to differentiate the household, but one that was not simple because

this act of setting oneself apart publicly threatened the equality of households in Gau.

It was migration and the cash from migration, particularly from such prestigious jobs as teaching and the army, as well as other government jobs such as forestry and water management, which would provide cash in the quantities required to build a *pakka* house (see chapter five). A large tiled *pakka* house may be the object of envy, so pride would be tinged with wariness and the three fanciest houses in the village were also the greatest sites of public conflict (shouting matches, court cases and the village women's group sanctions seen in chapter one).

Building a *pakka* house would be a long-term type of action tied in to ideas of status and the aspiration to a semi-urban or middle class aesthetic. Households in Gau would not feed each other at times of need, but use surplus as well as loans and wages from town for ostentatious building of *pakka* houses (cf. Sahlins on southeast Asian societies 1972:224). The temple, school and health workers office were all *pakka* buildings, as was the *panchayat* (village council) building. Building a *pakka* house in Gau seemed less of a choice and more of a requirement for new houses. Sushil, a head of household who had a job with the IPS (government water services) told me (again, when my father was visiting): if I built a wooden house my children would ask, why didn't you build a *pakka* one? He had a *pakka* extension, with a kitchen and bathroom and a large room where most of the village squeezed in to sing, dance and celebrate the birth of his grandson later that year. One young woman told me that it took nine years to build the wooden house we were sitting in. People do not value wooden houses, they want *pakka* houses, she said. After all, 'who can argue against cement, the backbone of modernity?' wrote Taussig (2004:161). Karishma's elder father was one of the first in the village to build a *pakka* extension on his house, only later realising he would have preferred the thermal qualities of a wooden house. These decisions are not lightly made – weighed down by debt, he cannot now remake his house as it was before, and small fans run in the *pakka* rooms. His wife's diabetes medicine means that she feels the heat more than other people, rendering the fans particularly necessary.

Not having beneficial thermal properties themselves, the new concrete houses would be dependent on technologies of heating and cooling. They thus represented a shift for a few households (and many more migrating household members who lived in town), from the shade and thermal properties of a space, to a situation in the hot season requiring the outside input of electricity, cash and city products like the fan and the fridge. *Pakka* houses would thus shape the thermal practices in Gau. This was in contrast to the thermal practices associated with the older wooden and stone houses, which I introduce in the following section.

The wooden house in Gau and its thermal qualities

Fig 19 A wooden and stone house in Gau, with courtyard

Most houses in Gau were made of deodar wood, which had been floated down the river by the British, taken out of the water partway down to wherever the British were

planning to take it and carried up to Gau by villagers at night, older people told me. Wooden houses had a half-timbered ground floor with thick stone and lime walls and one or two fully timbered upper stories. The upper story would be clean, wooden and empty, in principle for guests or for the cold winter nights, but would sometimes be inhabited when there was pressure on space (as in the household where I lived). A married couple would have a downstairs room, whereas dependents such as grown children or widowed mothers might sleep upstairs. In polyandrous households the wife would have her own room, where she might be visited by each of her husbands in turn. A downstairs room could also house goats, but bovines would have their own structures. The stone rooms on the ground floor were dark and cool and a respite from the heat. The roof was made of thick, irregular slates on a wooden frame. These houses could be dismantled and moved if a family was moving.

The stories about carrying logs up the hill date this form of wooden and stone housing in Gau back at least to the colonial era. Berreman described the '[d]istinctive architecture of two stories with lower floor as barn and upper floor as living area, often with large open veranda or porch at the upper level' (1960:777) from neighbouring Utterakhand, where he did his fieldwork in the late 1950s. Zoller, who has done linguistic research in Bengan, northeast of Sirmaur, showed me photos of two story houses such as Berreman described, which were half timber and half stone.

Fig 20 The upstairs floor of a wooden house (Photo: Georgiana Keable)

Wooden houses would require maintenance, with labour-intensive scrubbing of the wood. Washing an upstairs room would often be a communal activity, calling on girls and women from the clan (a group of related households) to help. First water would be spread on the wood, then it would be scrubbed with abrasive stones (Karishma said that the wood used to be thicker but because of the scrubbing all the planks are now thinner, and in some places the nails stick out), then with sandpaper-like leaves, and finally wiped with a soft cloth. The wood would change colour in this process, going from dark to pale. In some rooms the ceiling and walls would be painted, reducing the labour involved because these only required wiping.

Manure and white or red clay would be used for the plastering of the stone walls on the ground floor of the house. The plastering schedule was similar to that described in Boivin's work in Rajasthan (2000:371), where life-cycle events as well as seasonal, yearly ones would mark time through the plastering of the floor indoors with different clay mixtures. The house, animal house and courtyard in Gau would be plastered with red and white clays as well as clay-dung mixes as part of preparations for the Vishu

(Besanti) festival in May and for big village weddings and again after the rainy season. Scheduled (low) caste households would decorate the inside of their house with white patterns on the brown plaster. The girls would go to fetch the coloured clay from particular spots on the mountainside, digging it out with a short-handled hoe, cautious in case of cave-ins.

I found that the thermal properties of wooden houses were widely appreciated in Gau. Sitting upstairs on the guest floor at a wedding during my first week in the village, I was told about the advantages of a wooden house. They said it's not too hot, not too cold. The bride (this was a 'light' second wedding where both parties had been married before, so it was rather informal) told me that they sit near the fire, so it shouldn't be so cold, and then go to bed (for warmth), and she said 'this is wood, in this the cold doesn't come in, compared to *pakka* [houses]'; 'and in summer heat doesn't come in [due to] stones on the roof' said a paternal aunt. The very roofs and walls of a wooden house would thus heat and cool.

In the heat, the wide stone walls would provide a dark cool refuge, their verandas shaded but airy, oriented to catch any breeze that might be around. 'Just as cooling appliances may play an active role in shaping what people to [sic] do with regards to their household cooling, so too can housing infrastructures, such as the eaves, solar orientation, shading, windows and space partitioning' (Maller and Strengers 2011:163). The permeability or otherwise of walls and veranda railings, the orientation of the house towards or away from the wind and the closing of cracks in the walls with thick, wet plaster were all part of the thermal management of the house and its outside spaces in Gau. The houses in Gau faced towards the wind because it was less windy, rather than away from it as in the neighbouring village which was more exposed to the wind. No house had glass in the windows. I asked a woman living near the lower end of the village about the advantages of her new brick kitchen and she told me that the big window let in the wind. The cooling properties of wind are part of house design and orientation, as well as a consideration in daily activity – where to go for grass (to a sheltered or exposed side of the hill) and where to siesta.

This openness of the older wooden and stone houses to the wind was a particular point of difference between those and the new cement houses. Though cement and brick houses may be constructed with windows to let in the wind, they would have an overall much more closed mien in relation to neighbours and anyone outside the house. The next section, therefore, leads towards looking at neighbourly relationships in Gau through examining the open and closed characters of the different forms of houses.

The open and closedness of the houses

The house in Gau was a space for being in, but also a space for being outside of. Describing ways of dealing with the heat before the introduction of air-conditioning, Cooper wrote about the use of verandas to cool off in the southern US, where people would spend time outside (1998:168). Resting on the veranda during siesta time to catch the cool breeze was common in Gau, as in many parts of the world. As massive structures, though constructed, maintained and worn away over longer even than a human lifetime the wooden houses in Gau were reasonably watertight but wind-permeable, providing shade and a degree of insulation and household privacy. In use, then, these wooden houses in Gau were open, not unlike the Manggarai houses that Allerton has so evocatively described:

> Manggarai houses are highly permeable structures, defined by the temporal flows of personnel, as well as the sounds, smells, children and animals that move between dwellings. This permeability – such as the manner in which the occupants of nearby houses call out jokes and greetings to one another – is part of what makes a house a locally valued place (2012:50).

These houses in Gau would be similarly permeable – the wind passes through, people pass through, voices bypass the open carved wood of the veranda – but the temperature would be regulated by the walls and the structure itself.[11]

[11] When I attempted to measure the temperature in Gau during the hot season, I was puzzled by how steady the temperature seemed to be, never veering far from the 24-26˚c range. It was only after a week or so that I realised that of course I needed to place the thermometer well outside of the wooden

Fig 21 Two cement extensions

The ostentatious urbanisation of the village landscape in antisocial ways (the concrete houses are walled rather than open spaces – their courtyards are enclosed rather than public) was in tension with the publicly maintained fiction of village-wide parity (within the upper caste group). As seen in chapter one, the *Rajput* families in Gau (which encompassed most households), were set up to be equivalent in status terms, as also found across the state border by Berreman (1963). For instance, the *pakka* house that my host Poonam Devi moved into the year I was in Gau, mentioned in the opening vignette, had an enclosed courtyard, with large windows but metal grilles covering them, to keep out the cat. This was not considered to be inside (though it was covered with a roof), as scheduled caste people could enter and sit there, but was more inside than the usual courtyard because the dog was fed outside of this space. Other *pakka* houses had walls cutting their courtyard space off from the path, though the

room where I lived in order to measure the diurnal temperature fluctuations. What I had been measuring, in fact, had been the thermal regulatory effect of the wooden house.

smaller *pakka* extensions generally opened on to the usual slate courtyards. So in the shape of the *pakka* houses neighbourly relationships were challenged. The high walls literally blocked the social interactions with neighbours and the voiced hospitable offer that the latter part of this chapter deals with.

Both wooden and *pakka* houses in Gau were used in particular, social ways. Having briefly described their material forms and their thermal qualities, and before plunging in to the neighbourly politeness and hospitality sections that make up the second half of this chapter, I would like to remind the reader here of the essentially outside nature of life in Gau, and how in working and living the people of Gau would move between houses, fields and pastures, in continuous contact with ground that is their own or others'. This would happen between houses and outside of houses, not inside houses or between inside rooms.

Spaces in and around Gau were used, weathered, and they were also owned, or affiliated with particular households. Every house would be a container for a known household in the village, as well as a thermal regulator. Throughout the day there were places here and there where people would seat themselves or perch, sometimes hosted by others, sometimes unasked on the edge of someone else's field, sometimes on the little stone wall by their own house. These resting spots would be habitual but key for catching the sun, the shade or a water source, whether a stream or a pot with a metal cup on top in someone's *baas* (animal house). These would be particular places associated with a household, so it would be either one's own or other's space (except in the forest or on the road). The actual land, trees, and built structures that alleviate heat are thus all implicated in relationships with other people, other households. Because the village is comprised of houses, with the fields fanning out on all sides, every house juts on to other houses' space: aurally, olfactorally and thermally. Neighbours would have to get along. They have had to get along for years (for men, since birth; for women, since marriage). In order to get along they would be polite to each other.

The closed or openness of the different kinds of houses, then, are pertinent for how neighbourly relations would be conducted in Gau. These social relationships would be orderly and formulaic, only occasionally getting out of hand, and heating up. There was a lot of potential for conflict in Gau, and a lot of women who made efforts to not fan these flames, but it would sometimes flare up. This is important to bear in mind, so I move on now to the section on heated neighbours before getting to how the hospitality of the house would be offered to neighbours, as it should clarify what that offer concealed.

Heated neighbours

This section is about how heat would be used to talk about social conflicts and about people behaving inappropriately as part of these conflicts. This could happen in any season, but tempers were particularly frayed during the hot season when I was in Gau, partly because of the problems with water supply (apparently usually a problem in this season) which made life more tiring for women, who had to go much further to collect water.

Conflicts in Gau were conceived of as hot, in need of being cooled down. A good woman would be a cool one, who would diffuse a conflict rather than feeding the flames. The *pakka* houses in Gau became overly hot in the heat and did not serve to smoothen social relations because of their connotations of status, jealousy and inequality. They did not have the social coolness, one might say, that appropriate interpersonal behaviour and the older houses had.

Interactions between women would be delicate, brittle even, when there was underlying conflict. Keeping a straight face and not being overly emotional (that is to say angry or sad – cheerfulness was positively regarded) was valued, and Poonam Devi was not always able to keep in her frustration. During the monsoon season she shouted for a sustained period of time (45 minutes, my mother estimated) at a girl who was cutting fodder from her household's pasture ground. After this and another instance of shouting (at me), I was told by several neighbours not to worry about it, as 'she is

[overly] hot'[12] and thus does not behave appropriately. They had averted their faces during both episodes, trying to ignore and perhaps disassociate themselves from her during the outburst. Emotional displays were embarrassing for people in the village. Social 'coolness' was valued as a positive trait, spoken of explicitly for instance when talking about a new or prospective bride. This linking of emotional conflicts with negative heating was also done by the Manggarai: 'Such open argument[s],' Allerton wrote, 'though rare, are feared because they carry the potential to "make the land hot" … with dangerous repercussions for health' (2012:54). The context she described was an argument during a wedding between affines. I did not discover whether the negative heating of emotions had health implications in Gau. Even so, it may be clear that the maintenance of a polite social front in Gau had thermal connotations. The public explosion of hot anger had the potential to break down the social relationship in a way that would not allow the continued politeness between neighbours that kept things civil. The *pakka* houses also threatened these civil relationships between households because of how closed they were, reducing the permeability of the village landscape.

The hospitable invitation between neighbours

This section follows on from the tension arising from the closed *pakka* house that set the household publicly apart, and investigates the implications for how neighbouring women related to one other. In the public interactions of polite offers of hospitality between women in Gau, relationships would be negotiated and, I argue, the autonomy of households upheld. This happened largely through indirect means (rather than open, 'hot' conflict), thus masking the underlying fraught inter-household relationships. The use of houses in Gau is not separable from the practices of those that inhabited them. This part of the chapter connects neighbouring houses to each other through the practices of speech between the members of these households, thus also aiming to provide a sense of the village of Gau as a whole.

[12] '*garmi hai*'

Because the first winter rain was late, the wheat ripened later than usual the year I was in Gau. By the time it did it was late April and early May and very hot. Nevertheless, it had to be cut, and the black diseased kernels which smouldered into dust cut along with the rest, those could at least be used as straw, bhos, to feed the animals with. It was sweltering work, and I tired easily in the heat, while Anupriya, her brother and their mother Poonam Devi laboured on. When we were finished for the morning, walking along the path through the sunny terraced fields towards noon with tall bundles of dry cut wheat on our heads, Anupriya and I entered Gau. The path wound past houses, and a woman looked up from the clothes she was washing in the shade - 'come and sit!' she said. 'Going to the house' Anupriya replied, swinging the heavy load round as she turned her head, and we walked on without pause.

This offer of hospitality, a very common type of social interaction in Gau, could not be accepted, both because of the many seething conflicts between households and also, following Shryock (2012), the threat that the host/guest relationship would pose to the nominal equality between high-caste households in the village. Both houses in Gau and the offer of hospitality to neighbours, then, concern on the one hand the alleviation of bodily suffering from the heat, and on the other neighbourly relationships shot through with jealousy, status differentiation and the surface maintenance of the status quo. The use of houses for heat alleviation outside of the house one belonged to was mediated by these dynamic considerations.

Co-villagers in Gau (the women who I worked and rested alongside) would offer each other the shelter of their houses, thus providing a social-material environment that proposed to alleviate heat. In the vignette above, Anupriya and I were carrying heavy loads in the heat and were offered shade to sit in. This offer from a neighbour was an example of the hospitality politeness that frequently took place in Gau. Women in Gau would actively offer the shade of their veranda, the warmth of their fireside and the shelter of their roof to co-villagers passing by. When an offer was not made, but women just walked past each other in silence, this could even be a stark statement of antagonism. The offers took place in all seasons, but my focus here is on those that

happened during the hot season. I continue by using the literature on hospitality to provide context for this invitation between neighbours in Gau.

The offer of shade in Gau would propose to provide hospitality in adverse meteorological situations. Hospitality in Gau involved the provision of shade, thermal regulation, seating space, water, tea, food and social entertainment (hosts would ask anxiously 'but you aren't bored?'[13]). The broader hospitality for guests from beyond the village is not something I am concerned with here; I am interested in the relationships between neighbours. My focus, of course, is on the thermal dimensions of hospitality, the shade, the fireside and the warming and cooling of tea and water. Wilhite and Ling (1992) found that keeping the home comfortably warm in the cold was an important part of being a good host in Norway, while Maller and Strengers (2011:162), studied hospitable cooling practices in Australia. Thermal regulation for the comfort of the guest, then, is a known element of hospitality practices in different parts of the world.

I found that women in Gau would offer hospitality to both guests (that is people from outside the village) and neighbours. This was part of being a social person and taking responsibility for the respectable household. With regard to the Bedouin context (Adwanis and others), Shryock wrote that '[r]efusing to act as host would undo a house as surely as poisoned tea would kill a guest' (2012:27). People in Gau would feast all their neighbours at weddings, and visit and give ten rupees when a family had medical costs (even when that family was wealthier). Other situations of formal neighbour-neighbour hospitality included condoling after a death or participating in the clan meat-eating after the goat sacrifice in January. These hospitable exchanges between neighbours were appropriate on particular occasions, and not part of the daily practice referred to at the outset of this section, of offering passing neighbours respite from the heat. I move on now to the specificity of this offer, and how it was practiced in Gau.

When my father got out of the car on his visit to the village he went to open the boot while I paid the driver. I heard him say 'there is a woman begging here', and hurried

[13] '*aap bored to nahi hai*?'

round, denying this possibility. It turned out to be the mother-in-law from the house just below the road asking if we had eaten and offering us food by miming eating with her closed fingers, bringing them up to her mouth. Though this example uses an outside guest for illustration, my shock at his assumption that this (really very poor) woman could be begging was, I think, a reflection of my inculcation into the village norms in Gau. Hospitality was so important in the village that conflict over giving could turn violent, where the giver would dart in after a refusal with another dollop of food, and the guest would cover her cup with her hand against being given more. A neighbour who was visiting to pass on some news or to pick up a finished school uniform would be pressed to take tea, and forced into adroit responses to avoid the proffered cup. Emphatic refusals would be shouted at a mealtime, and sometimes result in small wrestling matches between host and guest. This happened during my first week in Gau, when a family whose son had got married sent someone to give the plate of sugar and *ghi* (clarified butter) for the woman in the household (Poonam Devi), who had, with the rest of the women, made a huge pile of *roti* (bread) for the wedding. This was standard practice, both the *roti* making of the women, and the sugar and *ghi* given in return. The man poured *ghi* onto a plate, and Pankaj, Poonam Devi's husband, told him to stop. He carried on pouring, Pankaj grabbed his hand to stop it and a bout of wrestling ensued over the *ghi* kettle.

Verbally too, the ability to formulate an offer such that someone is nudged towards accepting what is being offered was a widely practiced skill (and the lukewarm invitation grudgingly given was understood to be no invitation at all). In the context of witches who would poison primarily through food it was a civility that could be dangerous for those who accepted it. At the same time refusing ungracefully could be insulting – potentially itself an accusation of witchcraft. It took me a while to learn about this politeness while I was living in Gau. I used to twist myself up in tangles about why I was busy or what I was doing, until I realised that nobody else was worried about it, and Karishma actually took me aside to tell me that I did not have to go to someone's house even if I had said that I would. Her younger father excused my excuses to a guest who had invited me to his village and was staring at my listing up of how busy I was, saying 'she always speaks the truth' – a polite way of telling him I

had no subtlety and took everything literally. As I got to know people better, I would sit in the kitchen as my hostess cooked a meal and then make my excuses and leave before it was ready, or practice my growing skill in refusal in response to her offer of tea, behaving, in retrospect, more like a neighbour.

Between households in Gau, then, the thermal potentialities of the house would be socially mediated, that is to say available only via particular relationships, intentions and phrasings. The encountering of another person (in their courtyard for instance), would not involve a 'how are you?' greeting, but rather a 'come here', 'come and take-drink water' and most commonly 'come and sit!' or just 'sit!' in the informal, commanding form. Helliwell (1993:51-3) wrote about Dayak longhouses on Borneo where the longhouse may have had as many as nine or eleven apartments inside, each inhabited by a household. The dividing wall between these lived in spaces was made of bits of bark and other pieces and had holes in it through which cats would climb and neighbours chat. In fact, because all of the dividing walls were like this, there would be auditory flow from one end of the longhouse to the other. The voices, and even the sounds of the voices which were further away, would create a sense of community, and neighbours would thus be 'tied into each others' world,' as Helliwell phrased it (1993:52). Women in Gau would also participate in a community of voice, where the phrases exchanged were not necessarily about vital information (though gossip and observations about the weather could well pass that way), but the 'come and sit!' invitation as well as the 'are you finished washing clothes?' style of question (when the woman addressed is clearly underway but not finished with the washing), with the formulaic reply 'no, I am doing-washing clothes' would form social interactions as surely as the hackneyed 'how are you?' - 'I'm fine' exchange does in the UK.

Alongside the earlier part of this chapter on the different forms of housing in Gau, it should be clear that these interactions, ongoing as they would be in and around the village, were dependent on a certain openness of the house, and line of sight between people. Women working inside the *pakka* houses, even if out in the 'courtyard' but behind the high wall, would not be able to see others walking past and call out a question or invitation.

Fraught neighbourly relationships

The tensions in Gau between households with and without *pakka* houses, in a differentiated village landscape, threatened the nominal equality in the village and disturbed the ordinary flow of how neighbours related to one another. The inequalities were not necessarily a new thing – some families had a lot more land than others, for instance, and there was a long tradition of external trade and army jobs – but the *pakka* houses were a new and particularly visible form of difference, which had social implications in their closed form.

The polite invitations described in the previous section would almost always be refused, with answers such as '*koi bat nahi'*, in a sense not quite of 'no problem', but more 'it is no bother (not to sit/drink water)', or maybe 'it is no discomfort' or 'you don't have to bother yourself (about offering me a seat/water)' or they would reply 'going to get fodder'/'going to milk the buffalo'/'going to wash clothes'. Because of the paraphernalia involved in these tasks – milking pail, sickle and rope, bucket of dirty clothes, the potential host would already know that this is what her prospective guest is on her way to do. Reinforcing this norm of refusal, there would be negative gossip about people who would visit too much at others' houses (such as the anthropologist), as this implied shirking of household work. Not many people did so. Unmarried girls who did might risk a potential offer of marriage coming to nothing because of this kind of talk about them.

The offering of hospitality referred to the succour of the shade of the house for the body. This offer was mediated by relationships between clans, households and individuals. The offer of hospitality to neighbours concerned two elements of interest here. It involved on the one hand the comfort of the body in the heat and the alleviation of suffering, and on the other neighbourly relationships shot through with jealousy, status differentiation and the maintenance of social stability in the village. The practice of the offer was delicately laid on to fragile and skillfully maintained fictions of

amicable relationships. Neighbours would know that these invitations were rarely taken up. However, they would still ask.

These polite formulations would conceal dimensions of neighbourly relationships which all involved were aware of, but which would thus be buffered and not erupt publicly. The relationships between neighbours would therefore appear harmonious, as the strict politeness kept the peace, but conflict would sometimes flare up into outright shouting anger. There were many sources of conflict, such as land disputes, inheritance disputes and rivalries. There were court cases between families in the village over the laying and use of water from pipes. One lawsuit was over water provision – Sushil had been accused of building a pipe sending the water from a stream to a different village when the idea had been to supply this water to Gau (according to the women who told me about this). There was even a counter-lawsuit brought up by him, and so the father of a girl I knew who was studying in town went and stayed with her while witnessing in this case. Sometimes conflict would manifest in the shape of witchcraft accusations, though I did not see this happen openly. All these underlay the utterances between villagers, which, among other things, offered shelter from the heat.

It was explicitly acknowledged to me by the women in Gau that offers and refusals between neighbours concealed underlying tensions. One day when I was sitting on the veranda of the old lady I knew as great-aunt, a woman from the house below shouted up a request to borrow sugar. I perked up, because I actually had a bag of sugar, and was mentioning this to great-aunt before being bold enough to shout back, but she shouted back that she did not have any, telling me in a normal tone of voice that I should not offer my sugar to that woman because 'she doesn't give back.'

Refusals such as this, to lend sugar, or such as that of Anupriya in telling the woman who invited us to sit that we were on our way home, work to block the reciprocity of this relationship. Or perhaps keep it reciprocally that of neighbour, and not host-guest. It is in the fending off of the kind of relationship that the acceptance would imply, that neighbourly relationships in Gau are expressed. In understanding this refusal, I look to Shryock's description of hospitality as sovereignty (2012:20). He wrote that '[b]ad

guests and hosts ... are first of all people who refuse to accept the proper role of host or guest. This refusal is most likely to occur when guest and host cannot agree on who controls the space of interaction, who is sovereign, who belongs, and who owes or should offer respect' (2012:30). In the context of hospitality, then, 'hosts and guests' he states, 'cannot interact as equals, even when they are' (2012:28). Applying this in Gau, it may be seen that maintaining the nominal equality of households was thus a motivation in minimising hospitable relations (outside of formal contexts such as weddings), between neighbours. They could remain polite to one other in public for as long as their tempers stayed appropriately unfrayed, but going beyond this into closer relationships of exchange of shade and succour was risky and threatened the continued equal relationships.

Dumont's (1970) classic work on caste differentiation and hierarchy in the Indian village has coloured much of the work done since. Dirks (2001) found that the peculiarly hierarchical reading of caste in four broad categories with Brahmins at the top had in fact emerged during British colonial rule. Among *Paharis*, however, as Berreman (1960) found, the egalitarian norm goes some way in the opposite direction, though the high- and low-caste groupings were differentiated. So the polite offer of hospitality is part of the social system that upholds this, while the new *pakka* house both disturbs the politeness and threatens this equality more generally. The polite hospitable offer is one mechanism through which existing and potential conflicts would be managed in Gau. Similarly, this politeness would help to cover up the status differences which the *pakka* houses serve to make visible. The *pakka* houses themselves, then, would threaten the established system of social relationships, and thus raise tensions, contributing to conflicts such as that over the February wedding covered in chapter one.

The house and climate change

Describing Bourdieu's analytical use of the house, Carsten and Hugh-Jones (1995:2) wrote '[m]oving in ordered space, the body 'reads' the house.' This chapter has been about how villagers in Gau would read the house socially and as thermal infrastructure

in offering its shade to their neighbours. Hospitality in the heat and the thermal qualities of the houses involved were part of how people in Gau managed their social relationships outside of the household. People would live in and use houses in Gau for thermal comfort and offer these to others. There would be a spoken side to this (the politeness), and a material side (the framing built structure). The gift of shelter offered by neighbours in the heat, in practice a form of greeting, nonetheless repeatedly acknowledged the discomfort of heat and the alleviating potential of the house. In these interactions the language of hospitality glossed over the underlying cracks of ongoing lawsuits, whispers about witchcraft and long-term resentment over water use.

In principle, then, the *Pahari* house, whether one's own or that of a neighbour, provided a refuge from the beating sun. The innovation of the *pakka* house in Gau confused this issue, closing off the house from passing co-villagers and becoming warm rather than cool in the heat. Inhabiting them meant discomfort, alleviated only by the expensive electric fan, vulnerable to blackouts. The *pakka* house demonstrates how an urban, emission-laden material was changing the social landscape in Gau, threatening the village equilibrium and also bringing new thermal experiences and discomfort into village life. It connects the village in very material ways to outside materials, factories and financial transactions.

This leads back to the global perspective established in the section on concrete houses all over the world. The forms of politeness in neighbourly interaction may be particular to *Pahari* villages such as Gau, but the springing up of cement dwellings relates to weather and climate change not only through the thermal qualities of the material itself, but also through the CO^2 produced in its manufacture.

The cement house relates to the global emissions of climate change because, according to Griffin (1987), every metric tonne of cement produced emits 1.25 tonnes of CO^2 into the atmosphere. The amount of cement produced per year results in what the Netherlands Environment Assessment Agency in collaboration with the Joint Research Centre for the European Commission have calculated to be 9.5% of total global emissions of CO^2 equivalent. And when (according to the same report) India is

producing 6.1% of global cement production (the second largest producer in the world, after China, with almost 58%), then the question of cement houses in Gau, or indeed cement buildings anywhere in the world becomes pertinent to climate change (Olivier 2014). Understanding what leads people to construct such houses, when the emissions make up such a relatively large proportion of global emissions, would seem worthwhile.

The second way in which the *pakka* house relates to changing climate, or indeed, the current climate as it is and has been in Gau, is of course the thermal properties of the house itself, as described in this chapter. When the materials that the house is made up of demand the addition of a fan and thus electricity purchased with cash then the very material of the house is shaping of an obligation to join the wage economy or grow cash crops. Domestic thermal regulation comes in several forms, structural, technological and social. This chapter has been about all three, attempting in particular to bring together the material and social dimensions of the thermal house during the hot season in Gau.

Chapter 5: Monsoon rain: Land moves, labour moves

The rest of the village bemoaned the rain, which meant no electricity and no road access, but Lalita, a recently in-married bride, had what amounted to her honeymoon because of the three days of heavy rain in June which caused such floods in Uttarakhand. Her face was shining as she told me how nobody went for fodder during those days, and how her husband was there and not able to get back to work in the

plains because the road was blocked by landslides. So they were stuck in their room for three days, only going to the kitchen to eat.

So far I have looked at the cold and the hot seasons and how the people of Gau would regulate their thermal environments socially, in terms of illness, household labour, domestic animals and housing. In chapter four, I described how the people of Gau would move around the village and to the fields and pastures, working and negotiating their relationships with other households. This chapter goes beyond the village to the larger regional picture, where weather would impact on people's movement.

Work on movement, change and uncertainty in anthropology (Ingold 2012, Tsing 2005) has proved fruitful in representing and investigating the changeable and flowing world around us. Building on work by Sheets-Johnstone (2011), Ingold noted that '[i]t is not just that bodies, as living organisms, move. They *are* their movements' (2012:438 emphasis in original). The weather – wind, precipitation, clouds, mist and sunshine – is equally defined by movement, flow *from* and *towards*. Without movement the weather could never arrive or leave, whether on time or not.

Fig 22 Karishma going for fodder during the monsoon (Photo: Georgiana Keable)

In this chapter I will use the rain-related landslides around Gau to talk about the shape of life during the monsoon, and how people would 'adjust' their lives in relation to these. Landslides around Gau would happen every year in the monsoon season and

also during episodes of heavy winter rain. The land would slide, *pahar girte,* the Hindi term for this literally meaning 'the mountain falls.' This chapter will show how the shifting rock and rain-related uncertainty of movement that comes with the landslides – because they would block the roads – would form part of people's lives. Looking at the shifting rocks can inform an understanding of how the climatic environment impinges on the lives of those perched there. Through looking at patterns of migration alongside the risk of landslides I will fill in the picture of the mixed economy practiced by households in Gau. Lalita's landslide experiences, both in Gau and in her natal village, hold the chapter together. During the monsoon, landslides would obstruct migration and road-based trade and movement. Both water and earth would flow, disrupting the flow of people and their goods. Pahari lives in the Indian Himalayas would happen on uncertain ground. That very ground may even fall from underfoot.

Development scholars have looked at some of the contributing factors to landslides, particularly in discussions around deforestation in India and Nepal. This conversation has related to both state activities in deforesting large parts of north India (for instance Haeuber 1993), and subsequently to the growing population using increasing amounts of firewood, with various proposals for solving this, such as cookstoves that are more efficient or burn alternative fuels (Jeuland et al. 2014). According to the Theory of Himalayan Environmental Degradation (THED), deforestation, caused by growing mountain communities after 1950 cutting more fuelwood, led to exposed eroding hillsides which made landslides more common. These in turn led to heavier monsoon runoff and flooding in the plains (Ives 1989:187). Describing the model, Ives revised his emphasis, arguing that it did not provide the full picture, which also includes responsible rural management of forest resources (Ives 2004). The THED version of events was popular among government forestry commission workers during the time of my fieldwork, which reflects the focus of Indian scholars (Tiwari 2000) although people in Gau did not necessarily see it like this. Fairhead and Leach (1996) provided an alternative narrative to the THED-type model, describing how the forested landscape of Guinea had been misread by scientists and policy-makers, who told a story of deforestation by local people, while the people had instead been managing the landscape and actually creating denser forest. As Metz's review of thinking around the

THED demonstrated, the idea of degradation in the Himalayas, as well as in Africa, has particular tenacity (2010). Metz analysed the assumptions behind this tenacity, finding, among other things, that geologists tended to assume stability rather than flux of a system, whereas the situation in the Himalayas, for instance with regard to landslides, is much more emblematic of constant change (2010:22). Also, the vested interests of local expert elites encouraged this version which blames the local people – a continuity with the disenfranchising language used by colonial rulers (2010:27-8). Although my work took place over a relatively short duration and does not provide information about medium-term change, the situation during the monsoon and winter rain of rapid shifts of the mountainside and flash floods feeds in to a post-THED understanding of Himalayan ecology. Some hillsides around Gau had been reforested under the Indian Forest Service, while others were barren due to landslides or kept without trees for fodder grass.

Landslides in the mountains around Gau would affect fields and sometimes houses, but most frequently infrastructure: roads, water pipes and electricity. This infrastructure is vulnerable to the monsoon weather, posing threats to the free movement of labour and the upkeep of affinal relationships. It is not necessary for villagers to think of themselves as remote – though officials and teachers posted to the area whom I spoke to did consider them so – for the breakdown of trade and transport routes to impact on their lives. The wife of a man who ran an NGO in a plains town not far from Gau told me 'they don't reach here,' referring to journalists, when I asked her about local casualties after the heavy rains in June 2013. Sirmaur district was considered too remote to be worth reporting death numbers from, and almost nobody in Delhi that I spoke to had heard of the district. That which the state provided, including medical care, ration shop provisions and services of various kinds would also be disrupted by these truncated possibilities of movement that the landslides would bring.

The flowing earth in this chapter illustrates the movement and uncertainty which characterise weather, complementing the more stable stories told in the chapters on the hot and cold seasons. First the monsoon is introduced, followed by an overview of the

movement of people in migration from Gau. Then a section on landslides discusses the implications of the road blockage that restricted the movement of Lalita's husband. Her village is itself sliding down the mountain, so the flow of the mountain disrupting the physical village follows. 'Adjust', a term used in Gau that complements the conventional 'adapt' will then help me consider the relationship between people in Gau and weather phenomena such as landslides. Finally the conclusion relates the material discussed back to climate change.

The monsoon in Gau

There was a sound as of strong wind but the branches on the pomello tree did not move, and the drops started and I called out 'sister-in-law!' as she squatted washing the plates outside and a boy ran up the path ahead of the weight of water as it came, and it RAINED. She looked up and darted in under cover of the roof as it came. I do not know who is putting out my bucket to catch the drips from the roof, but I am grateful. It means I will be able to wash my hair without going down to the stream in the morning.

Rain and rainmaking has been a well-documented theme in anthropology on weather (see Sanders 2003 for an extensive bibliography), particularly in the late colonial period in sub-Saharan Africa. Rain control has often been associated with rulers and kings, whether for fertility of the land (Miyata 1987) or opposing enemies in combat (Molnar 1994). Frazer, in *The Golden Bough*, devoted fifteen pages to magical rain control, and only five to control of the sun and the wind (1993 [1922]:62-83). More recent work on rain includes Vannini et al's (2011) piece on weathering Canada's west coast, which looked at how lives and places in the very rainy coastal areas of British Columbia were shaped by the weather that they dwell in, emphasising the drenching and continuous quality of rain in a context where the weather does little else. Rain has the fundamental quality, in non-irrigated agricultural societies, of being essential to the growing of crops, and thus to how households feed themselves. As an elderly

inhabitant of Utterakhand told Mehta: 'Vikas (development) has brought us access to more money, but agriculture remains dependent on the skies' (1996:189).

The rainy season in Gau is a damp time – causing mould, mushrooms and mist (all called *kwerd* in Pahari), the quick rotting of food, the swelling of wood, and the flourishing of green vegetation on all sides. The Pahari for monsoon is *chammasa*, meaning four weathers – cold and hot, rain and sunshine – all in one season. The monsoon is considered a dangerous but also necessary time in Gau. It would be a fertile time, good for the grass and the fields and the insect population. It would also be regarded as a beautiful time; girls would tell me that the monsoon was their favourite season. It was the lush greenery which was well regarded; the mist was seen as obstructive. Rain would be seen as beneficial to people and the land. '[T]hanks to its exposure to light, moisture, and currents of air – to sun, rain, and wind – the earth is forever bursting forth' (Ingold 2010:126). This was particularly apparent during the monsoon in Gau, the landscape during the other seasons being somewhat brownish.

Rain could also be dangerous, however, and create problems for the land and for people. The contradictory nature of the monsoon has been observed by Ishii (1993) in Nepal and Pugh (1983) in north India, where this season is inauspicious for weddings, but all the same a time for growth and fertility. For Lalita, as seen in the opening part of this chapter, the misfortune of the heavy rain led to the fortunate situation of having her husband to herself for three days. It can thus be an ambiguous season.

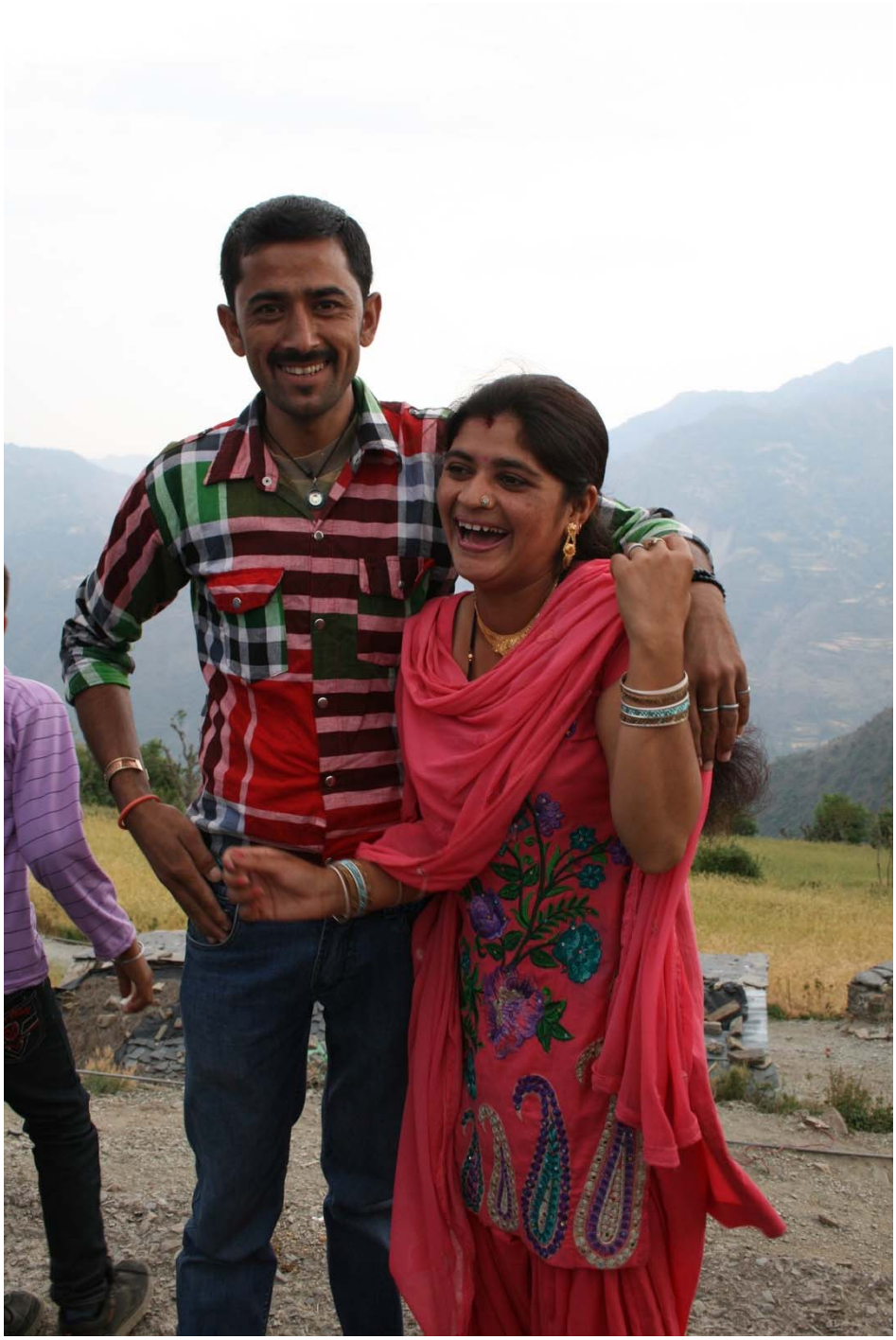

Fig 23 Lalita and her husband

Landslides are uncertain. Rain is uncertain. Both characterise the monsoon. There was no talk in Gau of the monsoon potentially ending, leaving behind an endless dry season, year after year, so in this sense the monsoon was considered to be stable. It is the details, of onset, quantity and general occurrence, which would concern the

agriculturalist. Within the monsoon period it was usual for rain to arrive in Gau irregularly, with a storm one day and then light rain for days at a time. So while the onset and heavy rain could be problematic, the way that villagers would deal with irregular rain within the monsoon was less discussed and more habitual. When it stopped raining there would be an alert motion among those sitting inside around the fire or twisting some rope, a response meaning the possibility of going to cut fodder or work in the fields was being considered. I was told by an old lady that 'if rain comes it will come' and that if so, 'young people will quickly collect the grass for fodder.'[14] People in Gau did not work outside while it rained. During heavy rain everyone would sit or sleep inside, as Lalita did in mid June 2013, when she was stuck inside with her husband. Similar to the bemusement when I ventured forth at sunny times during the hot season, when it rained I would get consistent feedback such as 'when it is raining, where would you go?' Anupriya told me one rainy morning that when it rains and Poonam Devi, her mother, does not send her on some work, then her eyes open on their own in the morning. But when it is sunshine and Poonam Devi wakes her to start work, then it is hard to get up.

The rainy season would be a time of hard work in the village – carrying manure to the fields, weeding between the maize plants and carrying cut green grass for fodder. Karishma and I would go to cut grass. Walking along the level path that traversed the mountainside, we enjoyed the swish of wet grass against our ankles. The mist came and went, and we stood in her family pastureland, facing the steep hill, lopping off thick handfuls of wet green grass with our sickles. The water in the grass and in the manure would make all the carrying heavy work. As the season continued the maize plants grew taller, and I went up to see Kali who was watching for monkeys among the plants. She sat with her friend resting and snacking in a makeshift shelter above the fields. I thought the maize looked rather stunted, and wondered whether it was a bad field. No, she said, these were a new kind of seed, they do not break when the wind blows as they are not so tall. I had earlier wondered aloud why Poonam Devi was feeding the buffalo maize plants, and she had said it was because the plants had been blown over in the wind.

[14] *'agar barish hogi to hogi'. 'javan log ghas jaldi [early/fast] lete.'*

Another job, known as ‘cleaning’ the field in Gau would involve moving rocks out of their fields every few years. Manure would be carried to become earth in the fields. They would move water too, both through the pipes and in pots when pipes failed. Many houses did not have private pipelines so would gather water by pot from one of the two public taps. Water, manure and stones, then, would be burdens to be shifted, alongside the edible grass and milk. This work would have to happen whenever it was not raining, often leading to long work days compared to other times of year. Around the village people would move to work. They would walk along the paths that patterned the mountainside, shifting and processing materials.

Movement of earth

Fig 24 The path by the stream collapsed on the 15th and 16th of June 2013

Heavy rain would cause landslides, having effects on infrastructure and the landscape.

That weekend, of the 15th and 16th of June 2013, when Lalita was stuck inside with her husband, the rain was so heavy that several of the terraced fields around the village collapsed. (The state would provide compensation for a properly documented collapse of this kind.) It was so heavy that the entire area around the stream below the village fell into rubble, and the path leading down to an outlying *baas* had to be re-trod. The impact, though, in neighbouring Utterakhand state where I was on the night of the 15th, was worse. The rain drummed on the tin roof of the room where I was staying in Dehradun with relentless force, and the streets were flooded knee-deep, though buses still ran. In the hills above town that night the heavy rain had caused a flash flood in the popular pilgrimage destination of Badrinath, destroying many buildings, killing at least 5700 people (Solanki 2013), and cutting off the roads so that rescue missions and food drops were rendered particularly difficult over the following months. The death toll is complicated by the presence of Nepali migrants working as porters and manual labourers in unknown numbers, perhaps as many as 12,000. Because they were not all registered, there was no list of missing persons to compare with the 1264 Nepalis who returned to Nepal in the four days following the flood (Bhattarai 2013) and those who would have returned subsequently. According to an article in CNN online shortly after the flooding happened, unregulated development and tourism, including dam projects, extensive mining and haphazard road construction exacerbated the scale of the problem when it happened (Shadbolt 2013). Though Lalita was happy about the heavy rain, then, for many others it caused tragedy.

Landslides in the area around Gau were not always so dramatic as those associated with the heavy rain in June 2013. They could be anything from a trickle of stones to the collapse of an entire mountainside. They would frequently occur around roads, newly cut into the side of already steep mountainsides with poor vegetational cover, affecting productive land, the terraced fields, and posing risks to inhabited areas. Karishma told me that having a flat field was not advantageous; it should slope downwards so that the water could run off. If the field collected water it would be more likely to slip and fall. Landslides around mining sites, which cut into the mountainside, were not unusual. Landslides around roads would often block the road and although the recent wheat harvest in Gau in June 2013 meant that there was grain enough, no

plains goods such as salt and oil could arrive during that time.

Movement of people

Lalita's husband was in the village on a short break and had meant to return to his job in the plains when the landslides blocked the roads and thus prevented his journey for three days. People from the hills, particularly men, would very commonly migrate for work. The women would stay behind in the village, farming. This kind of mixed economy, where migrants may be seasonal or even more temporary, has been called 'pluriactivity' by Netting (1993), 'multiplex livelihoods' by Bryceson (2002) and described as hybrid urban/rural livelihoods (Fairbairn et al. 2014). The 'multiplexity' of livelihoods has been going on in the region around Gau for a long time, as pointed out by English, who wrote '[h]ill-men continue to supplement family incomes by taking work for years at a time as road builders and timber cutters in Sikkim, Bhutan, and in India's Western Himalayan districts' (1985:76). In fact the literature on polyandry (for instance Pasternak et al. 1976:122), makes the case that having multiple husbands is a kinship system particularly suited to the migration of at least a few of the men in the household for trade, warfare or other purposes. Though the roads may be new, the regional movement, then, is not, although it may be taking new forms. Many Himalayan populations are mobile, including traders like the Bhotiyas in Uttarakhand (Bergmann et al. 2008), Gaddi herders like those who left the young goat with Poonam Devi in Gau, pedlars who would come to the village, and others who would move for trade and work. The work of the household, as Pahl pointed out in work on the UK, includes that undertaken within the house, outside of it, and also remotely by those who may not even reside at home, but who contribute financially, with labour at harvest time, and in other ways (1984:30).

An elderly grandmother, senior of two co-wives, no longer able to work due to lameness and blindness, told me a story. There was once a childless couple, she said, and they wanted children and they wanted children, but they did not have any. But they prayed to god and their prayers were answered: one day the wife became pregnant and they were very happy. Her time came and she got a strong pain in her ear and out

hopped a little frog, and that was the end of the pregnancy. There was nothing left inside her belly. So her husband was a bit upset: 'a frog!' but the wife said, 'well we have been given a frog, now we must care for him.' They fed him milk and he grew up to be quite a nice little frog. When he was grown he went to his father and said 'father, I would like to go out and seek my fortune.' His father said 'son, you know we have very little, we can't even afford to pay for the bus ticket into town.' 'Don't worry,' said the frog, 'I'll get there.' So off he went, hopping into town. When he got there he fell into talk with a shopkeeper. 'I bet I could carry off everything that is in your shop!' said the little frog. 'How could you, who are so small, carry off a single bag of rice, much less everything in my shop?' said the shopkeeper, disbelieving. 'If you can do that you can have it all for free.' But the little frog popped everything from the shop, food, furniture, cloth, money, pots, everything, into his ear until there was nothing left. So the shopkeeper, though very surprised, agreed that he could have it all. Then off went the little frog, hopping back up the hill to his home. His parents were surprised to see him back so soon, wondering whether things had maybe not gone so well in town. But they were overjoyed to see him bringing back all the goods from the shop with him, and it filled the whole house once he had unpacked it from his ear. Then he went to his father and said 'father, I would like to marry, could you find me a wife?' His father agreed, though with some doubts as to who would be willing to marry a frog. He tried one girl, she laughed, he tried another, she looked haughty, but the third girl was humble and she said 'oh well, if it is my fate I will be married to a frog.' And they were married. However, she found out that at night he took off his frog skin and became a very beautiful, shining young man. Her friend in the village persuaded her to burn his frogskin one night when he had gone to sleep, so that all might see how beautiful her husband was, those who had mocked before. But he became very sad and went away, because he was a god and it was only at night that he could shine, not during the day when the sun shone. So she and her in-laws were left on their own.

So going to town to make one's fortune was well-known in Gau. In almost every family at least one member (usually a grown son) had migrated out. Many men would leave their wives in the village and return periodically. In the family I lived with, three out of four sons (the fourth was still at school) had moved to town; in Lalita's family,

her husband and his brothers all worked outside the village; and Kali's brother and uncle were both in town.

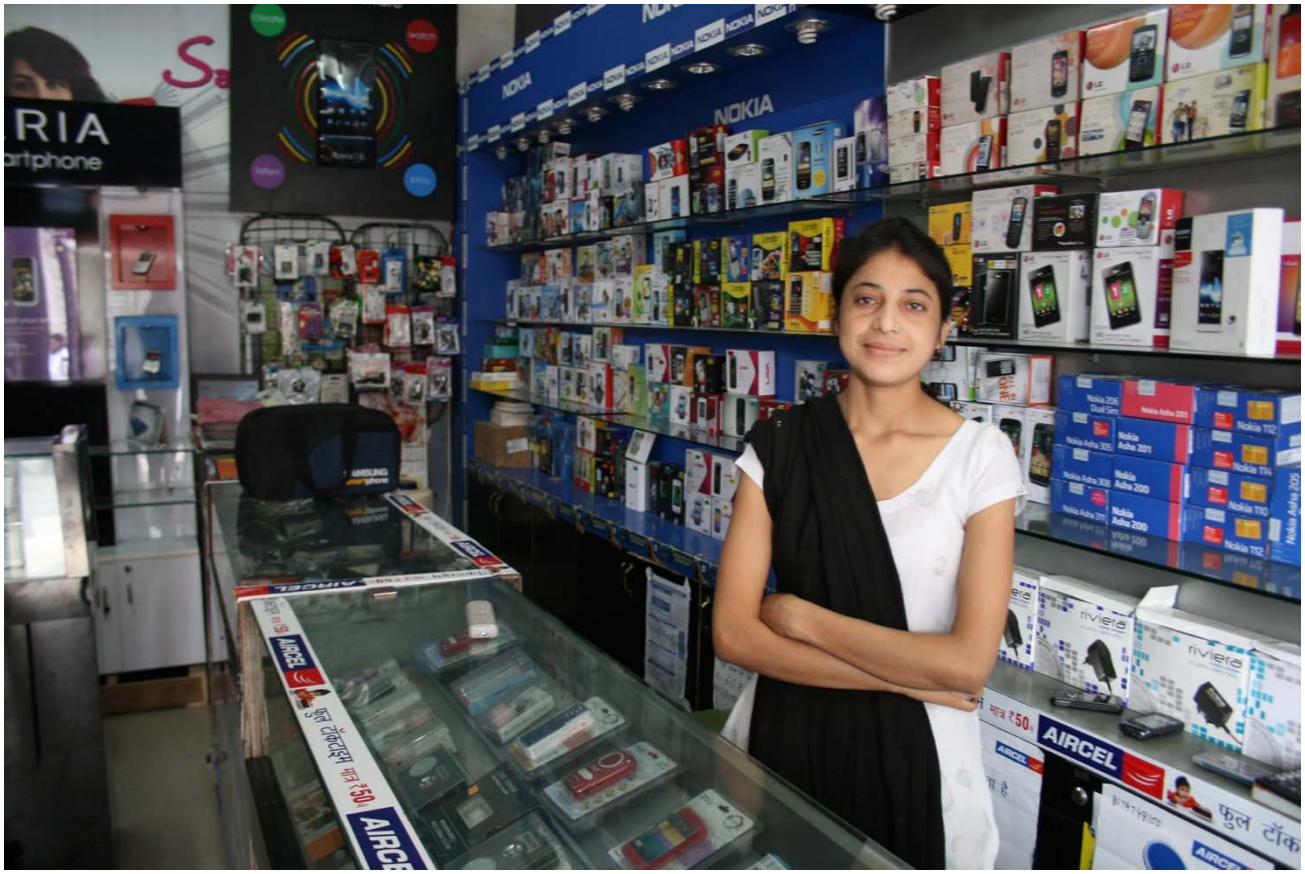

Fig 25 A village girl working in a phone shop in town

Nowadays girls would be sent to school and some might even go to town to study, which led to ambiguous situations in the household because they might then have a higher educational status than their mother-in-law, and probably their father-in-law as well. Moller found a similar tense situation around female educational status in the household in Utterakhand (2003). Women would also migrate to work in factories or shops. The family I lived with had a scheduled caste woman, Priyanka Devi, who worked for them occasionally for 50 rs/day, while the (male) worker who was working on the *pakka* (cement) house was paid 250 rupees a day, when it used to be 200 rupees. According to Poonam Devi and Pankaj the demand for labourers in the hills, both for farm work and building work, exceeds the supply. About halfway through my fieldwork the scheduled caste woman who worked for Poonam Devi and Pankaj went

to work in a factory where she told me she earned 5000 rupees a month and the factory even had AC during the hot season and was heated in the cold season. Meanwhile, her mother-in-law looked after her young children in the village.

The polyandrous tradition was less marked by the time I was in Gau – Lalita was married to a younger son and had an elder sister-in-law for instance – but many men would still migrate for work. They would migrate to the army or as craftsmen and labourers, as before. These days they would also work in factories, hotels, mining, as teachers and as drivers. 'In the vehicle there is danger. In the factory it is ok. There there is no danger.'[15] I was told. 'These days studies. So as to get a job' [16] is the important thing, said the same old woman. One form of migration that no longer took place in the village was pastoral. Previously families had had herds of sheep and goats kept for their wool and meat, which men would go off with for months to graze. There were also songs about this form of life among those sung at weddings and festivals. Some old garments remained, made of thick homespun wool. Whether because of the availability of cheap synthetic fabrics, or a combination of factors, this no longer took place, though every household kept at least one goat and grazed oxen locally.

Some people (for instance Kali's uncle) would move down to the plains to stay; when they took their wives and children with them they might not move back. This permanent migration was an expression of 'the ability of people to step outside their farming ecosystem altogether' (Russell 2010:75). Household members would go off and make temporary or permanent lives in town, and then, as the elderly toothless grandfather's son (himself a grandfather) said to me, rather sadly, their children will describe themselves as 'from town' rather than 'from the village' and they will not know, even not believe, what life used to be like here. Some households bought land in the plains, and would send a member or two to work that land. Almost every well-off family I knew in the village had a plains branch in the male line. Acquiring new land or building a bigger house in the village would be tricky, but a house in the plains would provide access to education and other facilities for the grandchildren. One

[15] *'gari me khatra hai. Factory me thik hai. Isme khatra hai nahi.'*
[16] *'aajkal pardhai. naukri milne ke lie.'*

scheduled caste family whose son had done well in school had moved to town completely, leaving their ramshackle house at the lower end of the village to fall down, but later having a *pakka* one built. Further up the social scale, Anupriya's eyes were shining as she talked of her youngest brother becoming and marrying a teacher. This move, with the remaining three brothers employed in town, would effectively end her household in the village, but of course she would be elsewhere by then with a husband or husbands of her own. Well-off villagers like Anupriya's parents, Poonam Devi and Pankaj, tried to fill the labour shortfall from the urban migration of their sons by hiring poorer Rajput or low caste villagers (men and women) to do odd days of paid labour in the fields or fetching fodder. However, although externally polite, low caste people would resist these requests in various ways. I was walking home with Karishma one day quite far from Gau and she called out to a low caste man in his field that her elder father was looking to hire him, and he said that her father had his number when in the end it turned out that he did not, making it impossible to get in touch with him without going all the way to his house, and making it clear that it was not in fact convenient for him to do this work.

There were consistent complaints from villagers who were in the city for study or work and in the village (who would go there to visit or shop) about the unpleasant climate in town and the comfortable weather in the village. It gets even colder in town than up here in winter, said relatives returned for a visit, extolling the virtues of the village as 'not too hot, not too cold.' The heat of the plains they assumed obvious. The people (remember that I was mainly speaking with women) of Gau would talk about town as both comfortable (less labour, using expensive gas canisters for cooking, opportunities such as education and shopping) and uncomfortable – involving chilly and stuffy cement houses, distance from family, dangerous transport, pollution and increased risk of crime. People in the village would complain about the hard work of farming, but some people found town boring or immoral, while others presented themselves as fully urban even after a few months there. Aasha told me some girls get the *sheher ki hawa* 'wind of the city' and look down on village girls. They start wearing jeans and if they come to the village they stop talking to others, and do not give the respect they used to give. She was living in town herself, but was engaged and planning to live with her in-

laws in their village. The contrast would be very visible between city relatives and those who squat and wash clothes in the courtyard, between lives spent walking from task to task, as young men (guests from the city) literally stand around, with nothing to do (cf Jeffrey 2010). Girls would go away to be educated and when they came back some would say they do not know how to work, and the unsympathetic response from their elders would be that 'they know how to eat'. Movement between city and village, then, was not unproblematic, but frequent, and this is what landslides would interrupt.

Vulnerable new water pipes, electricity provision and roads

The water pipe was older than the most recent road, but more recently provided than the electricity. These histories of road, water pipe and electricity, are histories of connectivity, the state, and of rights and conveniences. 'Infrastructures are matter that enable the movement of other matter. Their peculiar ontology lies in the facts that they are things and also the relation between things' (Larkin 2013:320). They connect but also fall into disrepair, are used by successive generations for different purposes and the intentions of the state are co-opted by local interests (Harvey and Knox 2008). The roads, pipes and pylons were ongoing, and their functioning, breaking and repair made up part of the experience of provision for people in Gau. The monsoon (as well as times of winter rain) was in particular a time of uncertainty for these conducive linkages.

The connectivity of roads and the connectivity of water as well as that of electricity are all implied in the weather histories of Gau. Water would move not only through the rain which brought landslides but also in the courses that people planned for it. On our way up the hill to deposit manure on a field I came across a water pipe which ended, sticking out into the air and the girl I was with said it was because the families down below had decided to cut off the water access for the houses above this point. There was also a court case going on with regard to a new pipeline which had been given as a job to one man in the village and there was a claim that he had taken that water and provided it to another village, for personal gain. He had a large *pakka* extension on his house. Seven men in the village had made a court case against him

and he had made a counter-case and so several of them were going down to the plains to testify during my fieldwork. Certainly water was irregular in provision for the village, and there was argument among the women about those who had private pipelines to their houses and filled up their tanks and the rest who had to wait at one of the two taps to fill their containers. A management strategy involving putting bits of wood in the pipe to slow the flow of water to private pipelines was used by a man employed by the water board, but this was not popular with those families. When the water ran dry from the tap and the containers were empty, women and children would fetch water from the stream down the hill.

Fig 26 Electricity pylon near Gau (Photo: Ellen Jerstad)

People talked about Himachal Pradesh as a state that is known for having relatively good electricity provision, and every house in Gau, as well as many of the *baas* houses, had electricity. This electricity would go down during times of heavy rain, and would be reconnected relatively quickly when the weather cleared up. Every house would use it for lighting (although Poonam Devi would borrow my torch to go milking in the dark winter mornings), and for charging the mobile phones which most households had. Some used it for small electric rings for cooking, to power electric churns, fans

and fridges. A few households had electric mills in which they would grind people's grain into flour. Although no household would mill by hand, many churned using a wooden rope-turned churn, and all cooked on a fire[17] because they would not make *roti* on an electric ring. The use of electricity then, was quite patchy and by no means dominated energy practices in Gau. It was otherwise with the new roads.

Fig 27 Road swept away by a landslide

In June 2013, as we have seen, Lalita's husband was unable to leave as planned to return to his job in the plains. The road down which he would have gone was blocked by landslides. At the time I was stuck in the plains and unable to get up to the village because of these same landslides. Although the roads in Himachal Pradesh, the state where Gau is located, were considered bad by middle class Indians in Delhi and Dehradun, the local government would usually clear them very quickly. These roads ushered migratory and trading people into and out of the hills.

[17] The discourse that follows on from THED is that by burning firewood South Asian villagers are releasing carbon into the atmosphere and by dint of their numbers contributing to climate change (Chandrashekar 2015:7).

The hills export resources and labour to the plains. According to proverbial wisdom in neighbouring Utterakhand: 'the water of the hills and the boy of the hills do not stay in the hills'[18] (Eutteranchal 2015). The new roads may be seen both as access and as bleeding, as the proverb implies. Roads as risky and a matter of distance and partings co-exist with roads as the vehicles of making dreams come true (Larkin 2013:333), like Anupriya's ambition on behalf of her brother to become a teacher and leave. The ration shops have been set up by the Government of India in rural areas to keep people there, but also cash crops would provide income without the necessity of going to work elsewhere. The wider conversation in India is split between those who would like to keep people in the villages so as to avoid swelling urban slums and those who think more labour migration would be beneficial. NREGA, the National Rural Employment Guarantee Act, was implemented with just such a rationale, to provide people with wages for work done in rural areas (Mathur 2012).

Movement for migration could be seen as part of a multi-pronged strategy where cash would be a way of keeping safe in case of crop failure, or if the rate for tomatoes, onions or other cash crops went down more than usual. Roads in and out of the hills would be vehicles not only for migratory members of the village, but also for goods. The movement of goods – fabrics, rocks from the mines, sacks of ration shop rice, medicines – would happen via these roads. Ration cards would be part of life in providing a certain quantity of staples at a fixed price, an important reason to have a cash-earning member of the family (these and clothes would be available by means of cash). Most families would send cash crops down to the plains for sale and get new clothes from town at least once a year. Older women in Gau would only rarely travel further afield (beyond their natal home). Poonam Devi told me she went to Shimla with her eldest son to get the loan for the mill they have. She got very sick on the bus and said to him, 'never take me again.' He had replied, saying, 'people go there for fun, and here you are saying you don't want to go again!'

It was, however, these same roads which exacerbated the landslide risk. The tumbling down of loose rocks was not something generally thought to pose risks to human life,

[18] *pahar ka pani aur pahar ka ladka pahar mein nahin rukta.*

but more to mobility, getting around. Old people in the village told of a time when there was no road at all, not even the old road along the Tons river that was built by the British. In those days we had to carry the grain on our backs to the plains to sell it, and the houses there were made of grass, an old toothless neighbour told me. There was agreement that this was the oldest road, and then the main road used for mining where the buses ran and then the local road, maybe thirty years ago estimated one neighbour, around the time electricity came, and finally the small unpaved road that led to the village itself, built only three years before my fieldwork.

Before the roads there were paths, the marking of the landscape in walking, which can be read as a process of knowing the land (Ingold 2010). These would still be used for work around the village, and indeed much of life in Gau was conditioned by the lack of road access to the fields, meaning that even those who could have afforded to rent a tractor to plough with had to keep a pair of oxen. The paths through the village in the monsoon would wetten, transforming dried manure into stinky stuff, emitting smells and squidge where before were dust and dryness. It used to be the task of the young men to clean the paths in the village, Poonam Devi told me, but they do not do it as they used to. Paths would sometimes provide an as fast or faster route than the road, as we found walking back from a wedding in a village across the valley in the hot season. George, Anupriya, Poonam Devi, Kali and I crossed the riverbed and followed the folds in the mountain to get home, refilling our water bottles at houses along the way. It only took four hours, as long as it had to drive, because the road took the long way round the valley. The steepness of the paths was precarious for feet unused to them, as Rao, working in central Sirmaur district found:

> While the cultured urban feet have some chance (with grim resolve) of climbing up, they have no chance at all of climbing down without injuries. Even the villagers have to walk carefully, stepping on each stone held in place by wet mud. One slip or a dislodged stone can lead to fatal injuries (1997:40).

In August 2013, after rain, my mother fell and broke her leg on one of the paths leading out of the village. A girl from a neighbouring village fell and died not far from there while I was in Gau (see Jerstad 2014 for more on accidents and weather). Landslides

would affect movement, blocking roads, but they would also shift areas of habitation and work. They could even shift whole villages. Karishma and I walked up the hill, past some of Anupriya's fields, and to a place with an incredible view. The river Tons snaked its way around the mountains, and there was a place where a huge landslide was visible and she told how the village which used to be there was swept away many years ago, it happened early in the morning, when some were out working, some sleeping, some going to milk the animals.

The sliding village

Later on during the monsoon of 2013, I heard from Kali about her uncle's village, not far away, which had been affected by a major landslide, and the whole village was slowly slipping down the hill. This also happened to be Lalita's natal village. Because of the consistent practice of village exogamy, every man in Gau had grown up there, and every married woman would have grown up elsewhere. A second kind of migration, therefore, involved visits by women to their natal village, or to the village of their maternal uncles. This relationship would end, I was told, when her brothers died. From this point visiting would no longer happen between these houses. The monsoon, Pankaj's elder sister-in-law said, is a time of longing sadness because a woman cannot visit her natal village during that time (see Wadley 1983). Visits would be problematic during the monsoon because of the uncertainty of being able to return or to get where one was going. Becoming stranded somewhere, and particularly on one's own, was a risk to be avoided for women.

Lalita invited me to go with her to her natal village on *raksha bandhan*, a Hindu festival when sisters tie a *rakhi*, a bracelet, round their brother's wrist and receive money in return. The barber's wife, for instance, is *raksha bandhan* sister of another barber down the hill in the village. This is a Hindu tradition of ritual male-female siblingship connoting familiarity and protection. The *rakhi* is tied by sisters and brothers sharing parents, but a woman without a brother or who for some reason wants the connection may claim this tie with another man. It took some time for Lalita to get ready, donning the gold necklace and heavy earrings from her wedding, nail polish for her toes, cream

for hands and toes, another cream for her face, various makeup, anklets, and then she was worried about not having bangles, only one gold and one red glass on either wrist. But we were late. The day had apparently been ritually delayed, said a woman on the path. Her companion reassured us that the bus would probably be late anyway.

Fig 28 Disconnected water pipe

Having taken two buses, Lalita and I walked down into the village. It was pleasant and very green, though you could see the ruined roads and various fields that had collapsed. The water pipe that should provide water for various villages, including Gau, was sticking out into the air, not attached to the next section several meters away. As we entered the village the first house shown to me had large cracks in and the general air was of lamentation. I was shown around the village by Lalita's unmarried younger sister. Several wooden houses had had their roofs removed; every cement house, some of which were quite new, had large cracks in, and wooden houses were askew, though standing. People told me it was because of the movement of water under the village, there were not enough rocks underneath and it was sliding down, sinking into the ground. The women were crying or nearly crying, the unmarried girls seemed more cheerful, but it was pretty sobering. There was one crack they said came just last night, and many empty rooms with big cracks in. All the maize was waving in the sunshine,

and fields of huge leaved *gagti*, ripening banana trees and the newly carved expensive wooden temple gave a surface impression of prosperity and good fortune.

Fig 29 Large crack in the floor of a cement house in Lalita's natal village

The emotional connection to the land and houses, especially of the returning *drinti*,[19] was as you might expect, since they had made a home elsewhere. But the *roynti*[20] were emotional about it in a way I was unused to seeing displayed openly – except for when a bride leaves her village, when it would be shocking for her not to cry. Women cried, telling me how wonderful the village had been, how they had to sleep up near the road in a school building because it was not safe, how the government had promised them land near Shimla, but that they did not want to leave their village. They came down every day to tend the land and the animals, but had been forbidden by the government to sleep there, though we did sleep after lunch in a new cement room that Lalita's family had built.

Heavy rain fell before we left. We walked up the hill, past the reddish earth and through the green flourishing leafiness, waiting for the bus in the rainshade of the tailor's shop,

[19] Women like Lalita who came from the village but who had married elsewhere.
[20] The in-married women.

talking about crying and missing one's home, and then the bus had been put in for repairs, so we took another one to the bend in the road town and ate salty snacks. Some other girls from Gau were sitting in the jeweller's shop and then we sat together in the milk car, waiting. When we finally got underway the car had to stop by a small landslide over which we walked, then in the back of another vehicle on the other side under the tarpaulin and between ropes, squashed in and wedged among the crowd.

The sliding village visit demonstrated that it was not just travel that would be obstructed by the fluidity of the earth under the monsoon rain. The very ground that people lived on could be destabilised. And this had a very clear emotional effect. The monsoon seemed to bring with it some seemingly insurmountable problems, but which people nevertheless lived with. The following cold season I heard that they were still staying in the village, they had not been given land in Shimla, but that the village did not slip during the dry parts of the year.

Shifting ground

People in Gau and the villages around would live with a moving earth. They would move, toiling up steep slopes with heavy loads, being shaken around as the bus rounded a corner, and the earth also moved, tumbling down, rain-loosened, onto the road. Screech! went the brakes, and there would be no way forward. Lives in Gau went alongside the earth, perched on the mountain. Girls digging into the hillside for white clay to plaster walls with would warn each other 'watch out! It may fall' and jump back if too much had been loosened. The weather during the monsoon would obstruct people's movement. Landslides, moving, would cause destruction, such as collapsing fields. Landslides would thus cause both obstruction and destruction.

Landslides could be seen as intersections as opposed to blockages of peoples' lives. So in June 2013 people in and around Gau could not move because the earth had moved, and this intersected with the roads in obstructive ways. But it also allowed for other things, such as Lalita's impromptu honeymoon. The rain itself would sometimes drip through the roof as the tiles had become disarranged by goats walking on them.

People inside would move to avoid the drips. When the river was very full it could drag away parts of land with it; most villages were built high up above the river. That is to say that the intersections, or potential intersections, of rain and earth with lives, would take forms that could be obstructive, but also formative.

Under conditions of uncertain and changing rain patterns, the people of Gau faced both hindrances to the collection of fodder, but also the landslides which would obstruct migratory daily life and the provision of goods and services.[21] The uncertainty of rain had implications for the carrying out of tasks during the monsoon within the village too. Because agricultural work would take place outside, and fodder collection must go on in this as in every season, and because becoming soaked was undesirable, rain would disturb work. This obstructive nature of the monsoon was considered by Chambers in his paper on poverty and seasonality (1982). Muddy roads as well as landslides meant that at the time development professionals as well as government officials would not visit villages during the rainy season. This meant that they remained uninformed about life in a full season of the year. Even when there were no landslides, people in Gau would make decisions about coming and going based on how hot or cold and rainy it was. Their movement happened *in relation to* the weather (as also reported for Canada's rainy west coast by (Vannini et al. 2011)).

Adjust and adapt

The rain renders the ground unstable. Climate change makes weather and the rain itself unstable. Human life becomes disrupted. When the ground shifts, whether it is the regularity of seasons, or the rocks literally falling away underfoot, people such as those in Gau would have to adjust.

Adjustment was a strategy much practiced by the people of Gau. The English word 'adjust' was used: a new bride must 'adjust' to her husband's home and relatives, people on the bus must 'adjust' to allow space for another passenger and I was told to

[21] The ambulance, the 'nurse', teachers, pedlars, the rations.

'adjust' by Karishma to the household I was living with in Gau. Adjusting, I got the sense, was what women must be prepared to do at all times, and even men must sometimes adjust when things become beyond their control, for instance important guests arrive who must use their bedroom, or a cheeky brother takes their shoes. Migration and connections elsewhere allow for certain kinds of adjustment. So a childless widowed aunt in town was a resource for one family in Gau, paying for medical care for her nephew and preparing her niece to be married. Another family had some land in the plains, and one son deputed down there to take care of it, and the father had a job at the local government resthouse as a cook. These adjustments involved fitting in to social categories elsewhere. When I visited an author interested in folklore from the plains at that resthouse (with a schoolgirl as chaperone) this man was the cook, and brought us snacks. In the village he was one of the village men, and thus we would not sit down to tea together. This use of the English term 'adjust' seems to echo the climate change discourse around adaptation. 'Adjust', as used in Gau, is a more personal, a more bodily strategy, something done in response to both social and logistical factors. 'Adapt' on the other hand, as used by policymakers and the IPCC is a fairly laden word, implying 'natural' even 'evolutionary' positivity to the process. It is positive in the way that 'adjust' is positive – it allows for life to be possible, and to carry on and continue. But there may be points where there is a cost to be paid for this, and where a life of adapting and adjusting is a life which may be harder, heavier, and even shorter. This thesis is a contribution to the literature on adaptation in climate change, but terms such as adapt and adjust overlie experiences such as described in this chapter, of hindrances, making do and difficulties of various kinds.

Rain, mobility and climate change

The monsoon rain would loosen the stones on the mountainsides around Gau. Then the hillside might fall, blocking the road and rendering wheeled transport impracticable. The people of Gau, mainly men, would be unable to come and go for work and study, and married women would not be able to visit their natal villages. Due to the practice of mixed economy, however, most households had some diverse income sources.

When the world is connected, through the rainy weather as much as through roads and the movement of people and goods, the material obstructions to this movement can be overlooked, and this chapter has been concerned with these movements and how they intersect in both conducive and obstructive ways. While the weather, for instance rain, moves above and around people, people are themselves in movement, and adjust, adapt and suffer loss. This movement concerns weather that stretches well beyond the village of Gau, beyond where women grew up in other villages and even beyond the far places where men go to work and study.

Movement may *lead to* change and can gain impetus from change. Although the flows of water that occurred in June 2013 and the flows of earth that disturbed Lalita's village may not be directly linkable to climate change, they are instances of the *kinds of* events that are becoming more likely.

This chapter has focused on roads and mobility, as well as the lives in Gau perched on the mountainside. Infrastructure is part of extra-somatic practice in the globalised world which is predicated on mobility for people, goods and information. Roads on mountains, though, in combination with heavy rain, lead to landslides. The effects of climate change are themselves highly contingent on the infrastructure (such as roads) existing. That is to say that were the roads not there then the same landslide (less likely in the first place) might not have had the same obstructive effect. The human and economic costs are therefore related to a combination of the effects of weather and the socio-material situation on which it impacts. With climate change we suppose ourselves to be facing increased weather uncertainty. The effects of this are, as seen in this chapter, contingent on both land use and the built environment.

The people of Gau, like others in the Indian Himalayas and other parts of the world, are subject to changes in their climate. In this chapter their movement for work has been juxtaposed with the movement of the land around them. Twenty years before the Christian Aid report mentioned in the introduction which compared the effects of changing climate to a kind of forced migration even if people stayed in the same place

(Christian Aid 2007), Deleuze and Guattari described nomads as follows:

> [i]n contrast to "migrants", nomads are prepared to ride out the instabilities and transformations of their environment, to hang on and do the dirty, dangerous work of coping with the variability of the elemental forces around them: Whereas the migrant leaves behind a milieu that has become amorphous or hostile, the nomad is the one who does not depart, does not want to depart, who clings to the smooth space left by the receding forest, where the steppe or the desert advances, and who invents nomadism as a response to this challenge (1987:381).

In these terms those (mainly men) who periodically leave Gau, those who are linked in to an economy of waged labour, cash crops and purchasable adaptation (such as electric fans), can be read as nomads rather than migrants. Their cyclical patterns of movement are characteristic of the livelihood strategies of people in many parts of the world, where the push-pull effect of marginal and unpredictable land yields or fodder availability (as Crate (2008) wrote about in Siberia) and of city life manifests in this movement. Tsing's (2005) work on the connected world encourages and liberates us to think about these larger connections, and in the following final chapter, pollution and visibility will serve to connect local Gau to the global.

Chapter 6: Pollution: material climate change in inhabited places

In this final chapter, I will consider pollution in order to address the problematically visible air through which the weather flows. In this thesis so far I have written about weather as part of lives in Gau, Himalayan India, showing how reflection on weather may illuminate other aspects of social life (how neighbours relate to each other, how work is managed in the household, how the risk of illness is understood). This thesis also aims to understand the social salience of weather in the context of climate change. This final chapter will bring these strands of weather-life in Gau and of the relevance to climate change together, attempting, like Tsing (2005), to bridge the local and global, and in doing so to indicate some of the broader relevance of the previous five

chapters.

As established in the introduction, there is something of a disconnect between ethnographic work on village lives and the global climate change discourse. Chakrabarty called these disconnects rifts, saying that we have to cross and re-cross them in the process of attempting to understand climate change because of the different scales involved (2014:3). To a degree this divide is necessary; to make large statements about what is happening to the climate local differences must be smoothed over. However, climate change itself is a highly differentiated phenomenon, and while publications such as the 5th IPCC report (2013) describe what is happening to the climate in scientific terms, they can be clumsy venues for nuanced information on what the effects might be on the lives of those who are subject to it. As Choy put it, writing about air pollution: 'air is the substance that bathes and ties scales of body, region and globe together, and that subsequently enables personal and political claims to be scaled up, to global environmental politics, and down, to the politics of health' (2011:157). Both are necessary.

The weather is both global and of particular places. It is the weather which is measured and fed into the models of climate data, and the weather which carries dust into rooms in Gau. Weather has no time zones, it does not respect national boundaries and it does not stop. As established in chapter five, the weather *is* its movements in a very tangible way – wind, precipitation, clouds, mist and sunshine are all defined by movement. In this chapter I use the concept of pollution to describe how the climate change discourse is part of the same air-world as that in which the people of Gau grapple with the weather issues in the previous chapters. Air, as Choy stated 'disrespects borders' (2011:165). The concept of pollution has proved to be a useful touchstone from which to access the connection of Gau to the global morally laden climate, as an exploration of a number of different ways in which the air, and thus perhaps the weather itself, can be polluted.

Part of the remit of this thesis has been to explore what weather is. Or, more precisely, what it is for the people living in a particular village in the Himalayas. Having looked

at heat, cold and rain, the question of pollution allows for a focus on the air through which the weather moves. Air is a medium which allows perception through it of sight and sound (Ingold 2000:339). The visibility of weather in Gau is an issue both of the weather and of the land itself. When Ingold remarked that '[t]he weather is not so much what we perceive as what we perceive *in*' (2010:131 emphasis in original), it is clear that some weathers are more amenable to perception than others. In his article on light and darkness, Edensor observed that dividing the atmospheric (he used the term celestial) from the landscape is misleading. He wrote that 'elements such as light, dark, sunsets, wind, rain, clouds and fog have been ontologically conceived as the immaterial opposite of the concrete, material earthliness of the land' but that following Ingold, the material and 'celestial' qualities of the landscape are not divisible. Rather, they are a place 'in which medium and substance blend, as they do also in the human body' (Edensor 2013:453). When medium and substance blend, perception and experience come together, as the weather is both seen, felt and also conditions the texture of the landscape. What the weather *is* becomes simultaneous with what everything else is, because everything else is *through* weather.

The air may transmit substances or particles which can be both socially and materially polluting. Some of these, like dust particles and smoke from the fire, have detrimental effects on health, as talked about by people in Gau. Others, such as mist, negatively impact visibility. The climate change discourse inherits from an older conversation about air (and water) pollution (iconically Carson 1962). This is a fundamental issue of matter out of place (Douglas 1966), where carbon and other elements are considered excessive and dangerous in the atmosphere. Cupples, Guyatt and Pearce's (2007) work on air pollution in Christchurch, New Zealand drew on ideas of masculinity which were proffered by residents in response to the high levels of air pollution associated with inefficient domestic heating methods. These were powerful enough, along with other elements such as cost, to seriously slow or even block the transition to more efficient and less polluting methods of heating.

The history of air pollution conceived of as such harks back to, for instance, the London smog (Bell et al. 2004), also a matter of both visibility and health. Colonial

administrators viewed the air as problematic for health in the area around Gau. The then densely forested southern Sirmaur was described in a colonial gazetteer as having an oppressive climate after the monsoon when the 'air is charged with noxious vapours' (Hunter 1885:556). The climate change discourse is about morally charged materials (especially carbon, but also other gases) in the wrong place. These are linked to ideas of culpability, where the processes whereby these materials enter the atmosphere become questions of blame, particularly in an era when climate change has been so well charted scientifically. Particular mapped-out processes have caused the changes in climate which are ongoing and projected to become significantly more severe (IPCC 2013), but those nations, corporations and individuals involved in these processes have still contested their part and what, if any reparations they should make to those most affected (Leggett 2016). One of the problems is that climate change is so problematically visible, with weather systems being extremely complex, so that linking particular emissions to particular shifts in climate such as the heavy onset of monsoon 2013 becomes extremely difficult.

The concept of pollution connects local ideas, global discussion and the anthropological tradition in South Asia. In this chapter I will start by looking at forms of pollution that would be talked about by people in Gau, continue with the forms of pollution that anthropologists have written about in South Asia and which also pertain to Pahari villages, and then approach the pollution that is implied in the concept of climate change, and the question of its visibility. The wind pulls up dust from the earth, another form of pollution. This will return us to the movement of weather and the connection between weather in Gau and that of the broader world, bringing them into the same conversation.

Pollution in and beyond Gau

A few people in Gau talked to me about conventional pollution, including the 'smoke' from cars and mining trucks which would drive up and down the mountain laden with rocks, and the industry in town, which caused the haze there. The Hindi term *kohra* 'mist' was used for the city haze of the plains. *Kwerd*, though, the Pahari term, was

not used for this, but applied to the thick white fog of the hills. So car pollution and that from factories was termed a kind of mist, but not the same as the mist of the village. I asked about the difference in weather between town and village, and a man who had moved to town and was back for a wedding in the village told me 'It is very different. In the city, outside there is a lot of pollution. In the village true/pure air is to be found, true/pure.'[22] 'The weather in the village is best,' a girl who had been to town told me. 'The wind blows. There isn't as much pollution.'[23] It was the hot season when we talked – so wind at that time was a positive thing. Though I was not in general free to interview men, talking to the elderly ones was sometimes permissible. I got to know the father of one of Kali's fathers, who told me one day while walking along the dusty road that the government gets fat from money from mining and that the blasts make rain less frequent. 'The earth mother gets pain in stomach'[24] he said. He also explained that the blasts disturb water sources. The pipeline to the village would dry out in the hot season. This mining and vehicle pollution, alongside the coal-fired power station pollution featuring large in Indian politics during my fieldwork period, must be seen in the context of the government project of monetising the economy since economic liberalisation in 1991 and making the shift from the *jajmani* system to waged labour (see chapter five on migration for work).

The term 'pollution' has been applied in social science work in India to the materials of food and bodies. Food and bodies have been described by Dumont (1970), Srinivas (1976) and Fuller (1992) in the context of caste to be ritually polluting and thereby shaping social relations. For instance where a low-caste person will not be able to cook for a higher-caste one, but may provide them with raw materials for cooking with. Or they may not be given water using a cup, but must accept it poured out for them with no utensil that may touch their lips. In extreme cases touch and sometimes even sight can be polluting. Only by washing and by certain rituals can the upper caste person regain their purity. These kinds of rules are well known in the anthropology of India; suffice it to say that they also exist in Gau, where high and low caste people are marked

[22] '*bohot farc hai, sheher med shudh, bahar to pradushit bohot hote hai. Gau me sach hawa milte hai, sach*.'
[23] '*gau ka mausam sab se baeiter hai. Hawa chalte. Itne pradushan nahi hai*.'
[24] '*dorthi mata ki pet dard'*

by the access or not to certain spaces, such as high caste homes, who eats with whom, and so forth. However, as described by Berreman (1960:777), they were not as marked as in south India, and allowed considerably more contact. In the same way that Berreman described, based on fieldwork in the 1950s (1960:775), the people of Gau at the time of my fieldwork were marked in two groups, the upper caste landowners and the lower service castes, blacksmiths, drummers, tailors. The introduction of waged labour had muddied these groups somewhat (this was the case even in Berreman's time), and the payment in kind to specialists, though still existing in some cases, was complained about to me as insufficient by low caste specialists. The caste rules about contact are characterised by the polluting capacity of food according to who has cooked it, and by extension the polluting capacities of certain (low caste) bodies. In these systems moral rules are applied to the location of substances and their appropriateness.

Haberman, in his excellent book *River of love in an age of pollution* (2006) brought together Hindu ideas of pollution with particulate pollution of the river Yamuna, a tributary of which runs below the village of Gau. He juxtaposed otherwise separate questions of religious pollution and the scientific and municipal concerns with dangerously dirty river water, thus adding to both conversations. Following on from this, drawing on the caste-based form of pollution, associated as it is with caste rules and ideas about ritual purity, can help to emphasise the social nature of climate change. Climate change is more usually associated with forms of pollution which are found in the air rather than in contact between bodies or entering of certain spaces. Nevertheless, neither the caste rules form of ritual pollution, nor (in most contexts) global climate change are straightforwardly visible, and so although the inter-caste pollution is not about the weather as such, it may be useful to think through in investigating the social salience of climate change as polluting. Here there is no viable social-material distinction: the food and bodily substances of caste rules are as material as the smoke and carbon emitted and referred to above. Although there is something repetitive about this re-emphasising of the uselessness of the material-social distinctions, in *Do Glaciers Listen?* Cruikshank (2005) described the stories and ideas around certain North American glaciers through the centuries, demonstrating the

entangled nature of the material and the conceptual in a morally laden situation with material consequences. Pollutions of the air, for instance in the case of climate change, are moral matters, as well as matters of substance, of material. Matter, according to Allen (1998:177), deriving from the Latin word for mother *mater*, is not necessarily a descriptor that excludes living beings, as often assumed in contemporary Europe. 'The complete despiritualisation of matter was an important step in the history of the category' (Allen 1998:177). The conceptualisation of matter as despiritualised may not be very helpful when dealing with matters out of place which are morally laden, such as body substances like spit in chapter three or the caste pollution discussed here, and the moral construction of pollution and emissions in the context of climate change has already been established. The problem is a dual one, because not only is matter conceived of as essentially dead by scholars contributing to the IPCC, governments and so on, but air itself is considered doubtfully material in the first place. As Choy put it: '[w]hen solidity is unconsciously conflated with substance, when only grounding counts for analysis, air can only be insubstantial' (2011:145). Local air pollution and global climate change join caste substance pollution in being issues of *morally laden matter out of place*. Understood as such, there is yet disagreement about how (and whether) to purify the matter in question. This question highlights the continuity of the air, where the local meets the global, industry meets village, and 'North' meets 'South.' The air is not divisible along national lines, as Choy stated above, and this makes it a slippery issue politically.

Pollution that makes climate change visible

Global climate change is problematically visible. One of the major problems which has dogged the climate change discourse has been how to talk about climate change, how to render it visible with words and images, if it is to be understood as a human phenomenon and not simply the subject of numbers and charts. It has been necessary to communicate that there is something in the air people cannot see, and that that thing is dangerous, but in non-linear and unpredictable ways. The visibility of climate change (and its limited and limiting representation through the images of polar bears on melting ice and parched landscapes (O'Neill and Nicholson-Cole 2009), then, is an

issue of perception and knowledge. The knowledge of climate change is bound up in the perception of it. Its visibility is therefore rather important. If it is not seen it may not be known. Because the scientific evidence for climate change is climate science, this takes the form of numbers and models, detached from people's lives. The numbers used to talk about climate change are numbers that refer to climate: temperature, rainfall and prognoses about these.

The task of making human lives visible in their affectedness by the weather, then, becomes part of making climate change visible. This task is sizeable, given the many ways in which human lives intersect with weather. In the writing of this thesis I am part of the project of increasing the visibility of climate change. So far I have been talking about the visibility of climate change in a more conceptual sense, but it is in fact very concretely about the ability to see – we cannot see carbon in the air with our eyes. Only specialists can deduce that it is there.

People in Gau inhabit the landscape partly through being able to see other places. When Poonam Devi shouted at a neighbouring girl for cutting grass in her pasture area, it was because she could see her there on the mountainside cutting it all the way from the village (a 20-minute walk away). Almost all land around Gau is owned, so property like drying wood or grass is protected by the chance that someone might see you taking it – there would occasionally be huge shouting matches in those cases. The only common land is the forest below the village, and the pine forest on the north side of the hill, from where mushrooms, pine needles for animal bedding and pine sap for fire-lighting in the monsoon would be gathered. Sonja explained to me that it was useful that they could see when the buffalo has got loose and was wandering into the field even when sitting on the courtyard in front of their house in the village, though during the monsoon this would become more difficult as the maize grew so high, in addition to the obstructive qualities of the frequent mist. Being able to have a visual overview of the landscape, fields, grass and so forth was important to people in Gau, spending daytimes outside, with an awareness of the sky as well as the landscape around. With seeing from afar there is weather before it comes, weather in other places. Japanese weather-watchers in the Edo period, for instance, would stand on hills and watch the

sea to predict the weather (Miyata 1987). In this way they would translate visible signs into knowledge of the future, knowing the material implications of those weather-forces on their way. The weather itself may be seen moving across the sky, and people in Gau would watch the weather too, and comment to me about how the weather was likely to be, based on their observations. Their concerns about visibility were thus practical ones. In the following section I would like to convey something of how these broad ideas emerged in particular situations during my fieldwork.

There were three piles of manure that Anupriya and Priyanka Devi (a scheduled caste woman who had worked for this family, by this point working in a factory in the plains) had brought up in previous months. It had gone dry and white on top, but was wet and in the depths warm, which Anupriya said was to do with the gas that is in the manure (don't you know? She said).

At first Anupriya and I were both carrying the shallow baskets and emptying them on the field. Her youngest brother was using the hoe to separate and dig out the manure. I learned how to empty the baskets of manure not by tipping my head, but lifting it with my arms (her brother is very strong, he was helping lift it to my head) and emptying it – otherwise it hurts your neck she said. Then also the kinnaul, the doughnut-shaped buffer for carrying heavy loads on the head does not fall off. After a while Anupriya helped Poonam Devi with the spreading and I carried on with both baskets, so he could fill one as I took the other. The weather was very misty, it was quite dark because the mist was so thick.

While we were working Poonam Devi told about a time when the mist was heavy like this and a small girl (from the house by where we had had tea on our way to the field) went with the oxen, to graze them, but lost them in the mist. She got so lost herself that she went the wrong way up the road (a path at that time, this was before phones said Poonam Devi). The girl reached the neighbouring village where they have the Vishu fair in April. The whole village of Gau went out searching for her until someone from the other village said a girl had arrived there. Later the girl married, had children

and then she went mad and died. The madness involved wandering. I asked if the madness had to do with the mist, and Anupriya said, who knows, it might have been.

When I went to that neighbouring village with my mother a few weeks later to collect stories for her and give them photos I had taken of them, a vigorous old man sang us a song. When he translated it into Hindi it turned out to be this same story, of the girl who got lost in the mist. This kind of song would be sung while dancing at festivals and weddings.

Pollution haze in north Indian cities may render visibility poor, but in Gau it is the fog, *kwerd*, which can become so dense that very little can be seen. During winter rain or the monsoon, mist would descend on Gau and the whole space of air would become moist, white and dense. Mist, said Karishma, is 'light light rain'.[25] According to Levi-Strauss, drawing on stories and myths from different places, fog is something that can link the landscape with the sky or separate them; it can close off spaces or open doors to other worlds (1995:8). Obscurity is a quality of mist. When we were out cutting fodder one day Karishma told me it looks like there is mist down the valley towards the river, but it is actually not down there, it is up here but you cannot see through it.

Villagers in Gau would use the word *saf*, meaning clean as well as clear, with regard to photos and film, referring to sharpness. They would also use this term about the sky – a clear sky is an absence of the mist or clouds which at times enveloped the village and swathed everything in heavy whiteness. Among the Zafimaniry people of Madagascar (Bloch 1995), the mountainous, forested, misty landscape meant there was often low visibility. The Zafimaniry valued good views, high places (villages were always on a hill) and unforested stretches which would tend to be less misty and rainy and therefore clearer. Clarity was valued like this in Gau, which is similarly mountainous, partially forested and seasonally misted.

People in Gau told me about what mist is and how it works in the weather system. In

[25] '*halki halki si pani'*

January I was sitting with some girls on their concrete roof in the lower part of the village. In answer to my question about where the weather comes from they said: well, you know how smoke comes from fire? In this way mist comes from below and makes clouds. On another occasion Karishma told me that the winter mist is the frost coming up throughout the day, then it 'sits down' again as frost at night. In our bedroom late on one January evening, Anupriya told me: 'when the rain comes, after that it gets warmer, as the rain disperses the mist. Now it is colder, because of the mist. Then we eat meat and get warm.' In June, as we were falling asleep, just after the heavy rains had hit, she smelt the blanket and said it has the smell (*khushbu* – nice smell) of the monsoon, as if the mist is in it. For the whole of the monsoon, she said, that smell will be there in the blankets.

Mist was part of life in Gau. The visual obstruction of the landscape due to mist was considered a negative thing, the clear, *saf*, being valued. So when the weather created and obstructed visibility, this became morally charged. The people of Gau are focused on clear visibility as part of functional subsistence practice. Not concerned with climate change as such (though worried about weather changes), people were appreciative of the visibility of the landscape, which in a steeply mountainous context allowed for certain practical things, such as keeping an eye on the buffalo and being safe from the threat of rape. Women in the village when I first arrived (and in the villages I went to visit to choose one for fieldwork), and subsequently, every time I traveled, would ask with great surprise: 'alone? you came alone? you must be very brave' – or, it was implied, rather stupid. This was related to the risk of rape. At first I was confused about the amount of work done around the village where women might be working alone, but then I realised that most of the time there would be others there, in the line of sight and hearing. This is another moral dimension of visibility, where line of sight and knowledge of where others are coming and going at any given time are part of the safeguarding of people in the village. This specific, local example is in contrast to the global climate change discourse, where the obstruction of visibility by the weather is not necessarily in itself a good thing, but can be good in terms of illuminating and locating the problem, which then becomes possible to deal with.

Being able to see or sense something is a first step towards being able to control and deal with it. When the air is ephemeral and beyond control, so is climate change.

In Bhojvaid's (2014) analysis of the Atmospheric Brown Cloud (ABC) over South Asia, she pointed to the visibility of that cloud, made up of soot and other particles, in the context of problematically-visible global climate change. Her ethnographic work on cookstoves and the development discourse linked wood-burning fires in rural India to global carbon emissions (Jeuland et al. 2014), although whether the ABC is mainly made up of emissions from millions of cooking fires all over India, or from urban and transport emissions and coal-fired power plants, is hard to say. NGOs in different parts of India, assuming the former, attempt (not very successfully) to convert villagers into using various forms of 'improved' cookstoves, using various kinds of fuel, with the aim of reducing carbon emissions and improving forest cover (Chandrashekar 2015). This discourse can be linked back to the Theory of Himalayan Environmental Degradation discussed in chapter five, because the ideas around poor villagers as culpable for burning the forest in their *chulhas* includes both the problem of loss of forest cover and the problem of the carbon emitted from these fires. The visibility of the ABC, then, is important because global climate change is not usually so visible. This is a form of carbon that *is* visible. The smoke has formed a dark cloud in the sky that can be seen from satellite images. It connects up the micro level emissions from households, transport and businesses to a phenomenon visible from high in the atmosphere, showing the cumulative magnitude of fuel decisions in the region. Gau is part of this conversation, not because people there were aware of the ABC, but because in burning wood, in vehicle use and in various industrial activities, they were contributing to what was being put into the air. Their actions had a material and etic conceptual continuity, both with Bhojvaid's ABC, and also with global climate change. The people of Gau are part of the world, described by Tsing, in which these things swirl overhead in the atmosphere and have particular and tangible ramifications, such as the 'lateness' of the onset of winter rain in 2012.

Pollution and substance in Gau: wind and dust

Having reflected on how pollution can render climate change visible (although this is not always what it does), and on the implications of conceiving of these as material for the local-global connection, I turn to dust and the wind that brings it into being in order to tease out a little further what an investigation of this form of pollution in Gau might mean for understanding the place of weather in people's lives.

Land and air cannot be neatly divided; they affect each other. In this section I will look at wind and dust, and how the movement of air and earth happen in Gau, as part of the larger movement of weather around the world. Having established the issue of matter out of place, and looked at visibility as a way of approaching the local and global weather connection, wind and dust serve here as another interface whereby lives in Gau take their place in the wider weather of the world. Weathering brings the dust into being, in the rubbing of wind against earth, so the work of dealing with the dust could be seen as weather-work, another instance of the weather-orientation of daily life in Gau.

The space through which weather flows in its emergent state is the 'relatively volatile *medium* of the air' (Ingold 2010:124 emphasis in original). Without this dynamic matter the world could not be seen, nor lived in. The pollution and smoke of climate change happens here, in the movement of the air. The structure of the house described in chapter four relied on the obstruction or halting of the wind, which is air in movement. While the mist obstructs visibility in Gau, the wind clears the mist: the wind would bring the rain but also hasten it on its way, as Anupriya told me. In writing about the wind I came up against the elusive, shifting nature of the weather, and the way it fills the sky. The air is about people's lives on the level of dusting, and swirling around in the breeze and the smoke, and then also above and beyond this in the clouds and the valley-submerging fog. It bridges these scales.

Work in anthropology on wind in different places in the world describes it as a matter of health (Hsu and Low 2008), as of life (as in breath (Parkin 2007)), as forceful and dangerous. Wind, in James's work among the Uduk (1972), would go away and sleep in a hole in the ground for part of the year, only to come out again in its season, when

it could cause fire in houses through fanning the hearth flames. In Gau, too, the danger of the wind was recognised, and Kali's elder sister told me how it would be best to stay inside during storms, or one might risk being hit by a falling roof tile ripped loose by strong winds. Forceful and destructive; wind is both a disturber and an enlivener.

Wind is visible in its relationship with other things, such as a tree or dust. I was sitting on the cement veranda of one of the upper houses in Gau, explaining that I was thinking of writing about wind and witchcraft together because they cannot be seen. 'Why is it not visible – look, the leaves are moving'[26] – said one of the daughters-in-law, indicating the leafy tree across the path with some exasperation at my lack of basic perceptive abilities. Parkin, working in Zanzibar on wind and spirits, was more observant, remarking '[w]hat are we to make of the claim that a sudden wind eddy is evidence of a spirit? Wind itself is not thought of as visible. Yet there is visible and tangible evidence of its presence, as ground leaves and dust swirl in the unexpected gust' (2007:48). The wind in Gau would swirl and lift up earthly matter that would become dust.

Like mist, dust muddies the distinction between earth and sky. In fact, dust can sometimes be ritually efficacious, perhaps because of this very ambiguity. Rosin worked on the mixing of dust on the road due to traffic and different wastes (2000). He explored how although the individual contributions to the road dust might be unclean, for instance human excrement, the final dry dust, whipped by the wind and churned by vehicles, was considered pure and clean enough to clean pots with (as one might do with sand or ash, purified by the activity of the river or the flames of the hearth). Work and activity in Gau, as well as the wind, would lead to dust in the air and on the ground. Then, when it was swept, it would rise again and be shuffled out once more with the thick grasses of the broom. So debris (including dust) was a product of human activity, as well as of the wind. Perhaps this dust is a product of the particular wind-like force that human activity and movement exert on materials in the world.

[26] '*Kyo nahi dikai deti - dekh patti hilte hai'*

Dust may be seen as polluting the house, a quintessential form of matter out of place. At dry times of year, as Karishma told me, it is the wind that brings the dust inside the house, from which it must be swept. The wind, in weathering the ground (the rain, frost and sun also weather the ground, of course), lifts dry earth up into the air, from where it drifts. Therefore, sweeping is weathered work. A number of things come together for domestic dust: the temperature and wind, but also the architecture, the openness of the houses in Gau. Dust is a feature of other weather than wind as well because when it rained, there would be less dust. One of the daughters-in-law sitting on the concrete veranda where we had been talking about the visibility of wind, said to me: 'when rain does not happen, there is dust.'[27] The existence of dust and the activity of the wind are so entwined that the work of sweeping becomes a weather-work, a work that responds to the weather. This work structures village life – the act of sweeping happens several times a day in every household, even I would sweep to clear out ash and pieces of dried clay around the *chulha* in my kitchen when I started cooking in the last few months of my fieldwork. I used a tiny brush an old lady had shown me how to make with long green pine needles from the forest and a piece of twine. She showed me how to bend them to make a handy brush and I tied it up with wool from my knitting.

The dust is ubiquitous, as an elderly grandmother expressed with her comment: 'it sits in the throat, it sits in the mouth, it sits in the eyes, where does it not sit?' as we sat on the courtyard in front of her kitchen. Dust can be a more dramatic health problem too. In Delhi at the end of May 2014 there was a major dust storm, killing at least nine people, according to the Hindu, a national newspaper. Some of the other impacts of the dust storm were damaged power lines and fallen trees and walls (Ali 2014).

A woman in Gau could be proud of a well-swept courtyard. Dust and refuse had to be regularly swept and thrown away, down behind a low wall or into the corner of a nearby field. Ridding the place of dust was about having a living space that was presentable, healthy and indicative of the work ethic of the women of the household. Sweeping is bodily work, and work that would be marked in the hierarchy. So in caste,

[27] '*jab barish na ho, dhul hote'*

clan or household terms all women would sweep. This physical labour was part of the work in chapter two, the work of the household. Sweeping is considered the work of the poor and of women. A bright-eyed only daughter of about eight was telling jokes to my mother when she came to visit. One of them was about a man who was visiting the city for the first time, encountering strangers and asking them their names. He came upon a dead man and asked what his name was and was told 'Amar' which means immortal. Another of the people he encountered was a girl sweeping, and her name, she said, was 'Lakshmi' which is the goddess of riches. The women and children gathered around laughed at the joke. The joke was about understanding the ambiguity of the city through these contradictory names, but I would like to focus here on the sweeping. The girl Lakshmi in the joke was doing as so many women do every day. This labour was so irreconcilable with the idea of the goddess of riches that it provoked laughter. Similarly, in work on domestic labour in colonial-era India, Sen wrote about how advice to colonial wives would note that 'Mohamedan' ayahs (who did childcare and wetnursing) would not condescend to sweep because they saw that work as 'inferior and degrading' (2009:304).

The movement of dust connects back to the understanding of weather as movement, (as well as ideas about labour and gender). This is the movement of elements conventionally considered part of weather: the wind itself, the clouds for instance. But also the movement caused by these, so the eddies of dust Parkin referred to, or the tree whose branches were moving in the wind that the daughter-in-law pointed out to me from the concrete veranda. The mist is part of the flow of the weather, and so is the dust, in making it visible. Dust is polluting in a direct sense of needing to be removed, swept away. It is also socially laden in Gau because the act of sweeping was considered a low-status one (this is reflected more widely in Hindu India, for instance with the different low castes who were traditionally allocated tasks such as removing dead cattle or 'night soil' – polluting to others). The conjunction of the movement of the wind with the pollution of dust, can inform the bigger picture too, because one of the things which is hard to control about climate change is how much the weather is in constant movement, and the flows of pollution, whether soot, wood smoke or dust, are difficult to trace because of this movement.

Pollution and climate change

Copeman's special issue on body tissues in India looked at 'relations between the double-ness of substance (its promise, as a locus of hope, emerging precisely from its capacity to debase) and its productivity within discourses of civil society and "modernisation"' (Copeman 2013:195). The 'substance' of weather has this same duality – both strongly positive and also potentially morally negative – as well as being dangerous. The 'substance' of pollution (whether of vehicle 'smoke' or of excessive carbon) joins weather in being part of it, but is not of it in the way that dust is not of the house, and must be constantly excised and purified away. The positive potential of what causes the pollution – convenient transport systems, the cooking of food, job provision in the mining and other industries – thus stands in contrast to the product emanating from these activities. And it is these benefits that also make up the emissions that are shifting the weather in what we call climate change. By bringing climate change into the conversation as a moral matter (Douglas 1992, Lahsen 2005, Hornborg 2008) it becomes part of the same sphere as local vehicle pollution and any other form of socially disapproved of misbehaviour.

In this chapter I have explored the ways in which weather flows and is *of its movement* and how it is of all places together. In order to connect the material in this thesis to the discourse on global climate change I have used pollution, wind and dust to approach these material and social connections. These are particular weather examples, which, like the material in the first five chapters, are constitutive of local lives in the weather, while being part of the global climate. These weathers are subject to change, and so, therefore, are the lives with which they are intertwined.

This chapter has harked back to the introduction and a more explicit concern with climate change. Through use of the term pollution – visible or invisible matter out of place – I sought in this chapter to approach the question of the air, while understanding climate change as a form of pollution. The chapter described some of what is understood to be in the air in and around Gau. The aim of this was twofold: first, to

make climate change visible, and second, to connect the village of Gau back to the global. However unhelpful the term 'globalization' might be (for instance Cooper 2005), climate change is an undoubtedly global phenomena, and the weather, too, is of the world, although similarly subject to regional and local variation.

At the same time, this chapter contributes to understandings of the visibility of climate change (for instance Slocum 2004), in terms of how people see what is around them, rather than the usual focus on media representation in this area. So this visibility is about relationships between things, people, places and the weather. Through asking about pollution this was juxtaposed with the concepts of clean, clear and pure – looking at these through the avenues of visibility, dust, ritual pollution and other aspects of life in Gau to bring the Pahari village into the global conversation about climate change. The aim has been to not leave Gau detached from the global, kept apart in a special category that is so particular it defies attempts at comparison or the drawing of wider lessons, as is often the case with ethnographies.

This chapter also makes up part of a growing anthropological literature on wind in a general sense – wind and rain in their movement, part of the anthropological focus on process, flux, friction and so forth as opposed to the unchanging and static. My focus has been on the interface between wind and earth, the dust itself that the wind whips up, and the meanings that dust has, as a quintessential matter out of place. Dust is pollution socially regarded – both a matter of weather and an analogy for the elusive, difficultly visible climate change. Movement is what makes climate change so hard to see, and to trace culpability. This movement characterises weather borne pollution, including dust and CO_2.

Conclusion

Harvest time. Nine year old Pihu sat playing with my mobile phone and commented that the computer that I was taking notes on sounded like the wind in the wheat.

This thesis has traced the relationships between people in Gau and the weather they live in, contributing to scholarship on weather, climate change and anthropology. The computer I was taking fieldnotes on that day in late April was whirring away, trying to cool itself. Pihu made sense of the computer's noise in terms of the weather, specifically the wind in the wheat. The device on which I was writing about the heat was not itself impervious to the heat. Reflecting back to how this thesis started, Barad's (2007) notion of 'intra-action,' which describes an interaction with something that one is inside, may once again be drawn on to describe how lives in Gau related to the weather. Lives in Gau were not just in, and certainly not outside of, but in intra-action with the weather, between shifting grounds and airs. Having worked through some of the ways in which, perched on the mountainside, people in Gau managed the weather around them while living in it, my assertion that the relationship between people and the weather is intra-active has been substantiated.

The weather matters to people in Gau – they are subject to it and respond to it. Building on my own motivation to learn about climate change through the experienced seasons, and from the scale of the body to the sky beyond the village, this thesis brings weather in to the remit of social science. By approaching the saliency of weather to social relations – work, human-animal relations, the house, monsoon mobility and pollution – I have shown the embedded and pervasive place of weather in social life. Further, I have demonstrated some of the connections between weathered lives in Gau and climate change issues.

Different parts of the year are characterised by different weathers. My approach has thus been seasonal, encompassing questions of health and work in the cold season, the relationship between women and the buffalo, housing and neighbours in the hot

season, migration and landslides in the monsoon and pollution that is both of Gau and also a global matter. I have argued that the study of weather provides a fertile ground for anthropological analysis. My aim has been to provide ethnographic description of weathered lives in the agropastoralist Pahari context, and I have also drawn on this material to make points which reach beyond the bounds of the village and enter conversations with other scholars. In this conclusion I will specify a number of these conversations, starting with weather, and going on to climate change and anthropology more broadly.

Contributions to scholarship on weather

Because weather is part of the environment, this thesis also forms a contribution to the anthropology of the environment, where buffalo, grass, rain and the hillside represent the wider environment people around Gau live in, work with and are dependent on. Before enumerating the contribution of this thesis to climate change scholarship I will lay out the contribution to the anthropology of weather, which forms the basis for these climate change contributions. As detailed in my introduction, the long history of weather research in anthropology – dating back to Frazer (1993 [1922]) and the colonial interest in rituals for making rain (Sanders 2003) – petered out following trenchant critiques of materialist cultural ecological approaches. Since the turn of the millennium, the study of weather has had a resurgence against a backdrop of interest in climate change. This thesis forms part of this body of work, which I distinguish from the interdisciplinary semi-grey literature referenced by Hall and Sanders (2015). Some of the work on weather fits under the rubric of water or rain (Stensrud 2016, Vannini et al. 2011), some under wind (Hsu and Low 2008), some under heat (Oppermann et al. 2015). Other scholars have been more theoretical (Knox 2015, Szerszynski 2010, Neimanis and Walker 2014). They all pursue the relationship people have with weather.

Weather, I have found, is inextricable from time, movement and space, conditioning how we know and experience the world. In taking a seasonal approach, following Longhurst et al. (1986), Wadley (1983) and Krause (2013), I have acknowledged the

temporal nature of weather which is vulnerable to the new uncertainties of climate change. A seasonal approach to ethnography is often submerged, despite the classical requirement for a year of fieldwork, seeing a lived-in place through all seasons. My seasonal approach has the added advantage of taking questions of process and change seriously, something all anthropologists aim for, because different seasons are being affected very differently by climatic changes. Yet an understanding of what weather means also requires a close focus on day-to-day practices.

In my focus on the movement of weather, and the movement it causes, particularly in the monsoon chapter, I have drawn on Ingold. 'It is not just that bodies, as living organisms, move. They *are* their movements' (Ingold 2012:437 emphasis in original). The weather *is* its movements and meets the movement of the human or animal body. In this thesis I have indicated some of the ways in which these mutually transformative collisions occur. In the placeness of the weather of a single village, as local to a place although moving and of the global, I have emphasised the contextual nature of weather. I have followed on from Barad's (2007) term 'intra-action', defined above. The experiences of and responses to weather in Gau, have remained inside the weather throughout, 'the weather conditions our interactions with people and things' (Ingold 2010:133). In this way I have avoided terms that imply people to be either wholly at the mercy of, or entirely in control of, the weather.

Contributions to climate change scholarship

I asked great-uncle if he thought it might rain tomorrow and he said: 'who knows what the sky will do?'

In thinking about climate change new terms are required. Building on what we understand and moving beyond this, scholars need to work laterally and enable new realities, simply from the newness of our thinking, viewing new areas as weathered. In this ethnography, I offer one way of '[establishing] novel communications that enable us to deal with the unprecedented demands of our era' (Stengers 1997:56). Climate change is a topic of anthropological concern, central to work on the

Anthropocene, the global, industrialisation, north-south inequalities and the rise of India and China as carbon economies. In this part of the conclusion I lay out how the findings of this thesis contribute to climate change scholarship.

In chapter one I established the intrinsically entangled nature of weather-society intra-action through describing how people in Gau dealt with the cold, why it was a problem, and how the riskiness of the cold was used socially both in relation to myself and the family whose son was getting married. Social motivations, I found, interplayed with illness-avoiding ones when people dealt with the weather. Climate change threatens human health, but the anthropological contribution must also be grounded in the morally laden interpretations and actions with which people themselves approach their weather. Health policy cannot continue to be based on ideas of individual 'rational actors' (Douglas 1992) if it is to usefully deal with the challenges that come with the changes in climate. As members of households, I wrote in chapter two, people in Gau would work, warming up and thus alleviating both the discomfort and the riskiness of the cold. This is in contrast to the idea that people should deal with the cold by heating the rooms that they spend their lives in. Heating is a climate change issue, both in terms of energy use and also with regard to the changing climate that exposes people to more extreme temperatures.

Chapter three concerned the relationship between the women in Gau and their buffalo, who they cared for and whose milk they were nourished by. Domesticated animals, whether kept for meat or dairy – and in India the keeping of dairy animals by relatively poor people is widespread – notoriously emit methane, a greenhouse gas that contributes to climate change. Dairy animals also consume plant calories that could be made available for people. It is doubtful, however, whether the steep grassy hillsides around Gau could be more efficiently used to produce edible protein. The chapter also serves to investigate the relationships of power between people and their environment, with the buffalo simultaneously cared for, sustained and exploited. The issue of farming is one that relates directly to discourses on how humans deal with their environments as responsible stewards or profiteering exploiters. The human-buffalo

relationship in Gau had elements of both of these extremes, while falling neatly into neither.

In chapter four I turned to the houses in Gau as thermally regulated spaces and sites of status. In relationships between neighbours, dealing with weather was socially regulated. This was made manifest in the construction of cement houses, with their unsociable high walls. Global cement production makes up nearly 10% of CO_2 emissions, so when people build cement houses, although these houses may not have optimal thermal qualities, this has a direct effect on climate change. Adaptation in the village of Gau was both to changing weather patterns (later monsoon, warmer summers, irregular winter rain) and to changing lifestyles (migration, cash, technological solutions such as electric fans).

The fifth chapter concerned the monsoon, during which the rain conditioned people's movement from Gau, both for agropastoral and other kinds of work. The mountainous landscape and the new roads meant that the rain had erratic obstructive effects on people's mobility. This relates to climate change because it is partly the unpredictable nature of the changes in weather which are likely to affect people's ability to lead their lives. The language of 'adjustment' used by people in Gau can be applied to their relationship with the changing climate. The weather is of all places and the people of Gau are entangled with elsewhere through roads and telecommunications, stories, genealogies, the movement of goods, experiences in the army and a host of other ways. Chapter six, following on from the linkages established in chapter five, used the idea of pollution to link the weathered lives of people in Gau to the global climate, as known by the IPCC. This connects the minutiae of going to cut fodder with a sickle and sweeping aside the dust in the morning to the wide skies of the world, through which the weather swirls.

Overall then, this thesis has provided contributions to a range of areas where climate change is and will continue to affect life for people in Gau and elsewhere. I hope that this thesis will help break open the limiting idea of climate change as a single issue, rather than a grouping of social weather vulnerabilities, which coexist, of course, with

other impinging issues (see AAA 2015). Weather matters for people in Gau, but it matters alongside other factors that matter. In the next section I recount what looking at weather taught me about other aspects of Pahari life, which constitute contributions to anthropology more broadly. Writing culture through weather can be helpful both to articulate the implications of climate change and to understand society.

Contributions to anthropology

The agropastoral livelihoods that involved much time outside, the forms that thermal infrastructure took and the social, hierarchical relationships between animals, people, and households in Gau made up the background against which people safeguarded themselves from the risky weather. I am interested in what I can learn about human society through an awareness of weather, and also in what this might mean for the effects of changing weather as well as other forms of change such as the urban/middle class aspirations touched on in chapters one and three.

Talk of the cold, poisoning and proposed community sanctions against one of the households in the village illustrated the weathered nature of inter-household relationships in chapter one. While Neimanis and Walker understood the body as being made up of weather (2014:563), this chapter looked into the weathering of *interpersonal* relations. In the first part of chapter one, the talk of the cold absolved the family with whom I lived of culpability with regard to my illnesses. The second part of this chapter pointed forward to issues of neighbours and status dealt with in chapter four, and described an instance of how, despite the stepping down of the women from their proposed boycott, nonetheless many refrained from attending the wedding, citing the cold rain as an excuse. The cold weather allowed for a veiled social criticism of the family gaining a daughter-in-law, their urban aspirations and the fact that they did not cloak these in humbleness in relation to other households in the village.

By exploring the work that people did, chapter two looked at the relationship between the person and the household in the cold. Becoming ill was a problem because it

rendered people unable to work. The physical movement of going to cut fodder warmed bodies on the cold mountainside. This complements chapter five, on migration to work elsewhere. The household as work unit was simultaneously employer, sustainer and provider. Those who left to work, study or marry belonged to the household in partial ways. Though the 'household' term was more popular in the anthropology of the 1980s and 1990s, as a unit of analysis it makes a lot of sense to understand the shape of life in Gau, where clan, caste and economic disparity are not enough to explain what structures daily practices of work and eating. The transition from the *jajmani* system of payment in kind to waged labour for members of low caste households was almost complete, with some payments in kind remaining.

Himalayan peasant agriculture described in this thesis in the context of Gau has been understood (for instance through the Theory of Himalayan Environmental Degradation) in terms of population growth and pressure on the land. However, the practice of polyandry and of out-migration in addition to temporary migration meant that this was less of an issue in Pahari villages like Gau. The steep mountainous landscape kept the women and some men employed in the fields and fetching fodder because even for families who could afford to rent a tractor, there would be no way for it to reach most of the small terraced fields. Leaving them untilled was considered immoral.

Chapter three contributes to the scholarship on human-animal relations and to an ecological anthropology in which humans are bound up with animals and plants as well as the weather (Ingold 2012:431). While remaining focused on the particularities of the relationship between the buffalo and the women in Gau, the chapter explores the rich avenues opened up by thinking about what the mutual nourishing done by the women and the buffalo meant for how their relationship might be understood, thus contributing to thinking on kinship, exchange and the entanglement of the economic and the social. The human-ecology relationship – responsible stewardship or ruthless exploitation – is examined through how the women and the buffalo care for each other during the hot season. How we understand the human-ecology relationship underpins the climate change conversation. How do we relate to our environments, including the

changing weather and the animals on which we depend for nourishment? I have endeavoured to make the environment social, to bring the household into material labour relations and the animals into the same sphere.

I read the buffalo as being themselves members of the household in Gau, in terms of hierarchy, work and contribution of their substance. This is a case of motherhood diverted into service; as the younger brothers in a polyandrous marriage lack full authority over their children, so does the buffalo mother, whose calf may be eaten by the leopard, but who will continue to produce milk and whose male relatives are absent entirely (while human men work elsewhere). Dairy cash was earned by women 'left behind' by the male urban migrants dealt with further in chapter five. Understanding the buffalo as part of the hierarchical household in Gau also contributes to understandings of the household in north India. The kinds of duties and rights that family members have can be understood more starkly in the light of the buffalo. The anthropology of kinship in north India is about hierarchy of age and gender. I add domestic animals, for a household that is like a smaller model of the *jajmani* system, men contributing cash and city goods, women subsistence agriculture, buffalo dairy and manure, children using phones and able to read contracts and apply for educated jobs (few male children aimed for a life of farm work). The connection is created by obligation which ties the buffalo in to the household, also illuminating the role of junior and female members, and the independence of different households from each other (as seen in chapter four).

Chapter four is a contribution to the anthropology of vernacular architecture, bringing together Taussig (2004) on South America, Ferguson (2006) on Southern Africa and Gardner (1995) on Bangladesh, and approaching cement, a prevalent global material, emblematic of change, which is extremely CO_2 intensive in its production. It looks at why people build with it, in the light of their relationships with their neighbours and how they ameliorate the hot season heat, alongside the wooden slate-roofed housing. This relates to middle class/urban aspirations. This chapter also contributes to the area of domestic thermal regulation, in which Shove, for instance her special issue (2008), Vannini and Taggart (2014) and others, have done interesting work on the use of space,

understandings of energy and the relationship between domestic thermal regulation and wider social issues but which lacks an anthropological perspective that examines the global south. Finally, the politeness between households blocked reciprocity between neighbours. This was about staying independent and not entering patron-client relationships (although poorer households did occasionally do labour for richer ones). This fills out the picture after the focus in chapters two and three on intra-household relationships. As a village study, I have used the weather focus to build an ethnography centred on the activities and relationships that make up life in Gau. Chapter four thus builds on the corpus of work on village India, highlighting that, although labour migration is extensive, affecting caste relationships, and new forms of housing are destabilising neighbourly relationships, as villages remain the locus of many lives in South Asia, work such as gathering fodder for the dairy buffalo is how days are spent.

In chapter five I shifted perspective to the connections between Gau and the wider region, looking at movement of people (particularly men), goods and services. The monsoon rain caused landslides, blocking the roads and halting this movement. This chapter contributes to scholarship on the Theory of Himalayan Environmental Degradation in terms of the impact of the deforestation which makes landslides much more likely on the denuded hill slopes. It contributes to the literature on Himalayan migration and on migration within India, illustrating the changing (but not new) nature of migration in the region. In chapter five, I connected the literature on migration and mixed livelihoods (within the household) to climate change and the practice of polyandry (also said to be about diversified livelihood forms). People in Gau solved the precarity of the uncertain monsoon through movement, but became more vulnerable to monsoon landslides because of this movement. Infrastructure (water, electricity), as well as the movement of people connects Gau to the state. And water and electricity too are subject to being cut off by the same monsoon and winter rain. Climate change is about uncertain ground, literally in the case of Lalita's natal village that was sliding down the hill. The chapter provides an instance of weathered life where adaptation (a key term in the literature on climate change) or adjustment (the

English term used by people in Gau) is more difficult than distant policymakers might imagine – the road when blocked may not, in fact, be traversed.

Chapter six contributed to scholarship on pollution, and to work linking the social, the material and science and technology studies of phenomena like climate change. The strength here is in the positing of climate change or air pollution as fully social as well as material phenomena, alongside the undoubtedly social caste pollution. It also contributes to scholarship on the visibility of climate change through looking at the ABC and ideas of visibility in Gau. And it furthers the work on the interface between earth and air in movement that is part of the weather, not only the wind itself but the substances the wind whips up, the dust and the mist that obscures and is substantive in itself.

Future directions

The aim of this thesis has been to demonstrate the ways in which weather permeates people's lives, how they intra-act with it, and what this means for understanding the implications of global climate change. What might this research mean for broader understandings of climate change, how might these ideas about weather feed in to a range of areas within anthropology, and what might be the implications for future weather research?

An understanding of weather in one place does not, of course, bring with it understandings of weather elsewhere. People not far from Gau in the plains and higher up in the Himalayas will have quite different material relationships with weather. Still, I would argue that in gathering the disparate academic areas of illness, work, animals, housing and neighbours, migration and pollution, having them speak to weather in the Pahari village I have opened up conversations with people working in quite other regions of the world (including the global North) and contributed to the ongoing task of making dealing with climate change more specific and tangible, and therefore easier to approach analytically, than it was previously. While I do not propose that all the ethnographic specifics of my findings may be pertinent to fieldsites elsewhere,

understandings of illness and temperature mesh with findings elsewhere in South Asia, opening up for work furthering the strong tradition on substances in relationships to the environment beyond. The implications of deforestation for landslides and therefore migration, meanwhile, are of relevance across the Himalayas as well as other mountainous regions. At the same time, the observations I have made about the nature of the household, agro-pastoralist relationships with animals, what working outside means for thermal regulation in the cold, and the use of cement and relationships between neighbours, could well be further explored in other weathered contexts. From the ethnography laid out in this thesis, it is apparent that an interest in weather intra-actions can deepen anthropological understandings across many areas. 'Complex problems' as Hall and Sanders put it, 'summon all knowledge' (2015:454). I suggest that research which maps out the socio-material weather saliency of life can contribute to the emerging understanding of what climate change means for people's lives.

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